

Pesticide Carryover Stocks Register 10% Drop in 1958

**But USDA Reports
Larger Inventory of
Newer Materials**

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WASHINGTON—The U.S. Department of Agriculture has reported that carryover stocks of pesticides on Sept. 30, 1958, averaged about 10% lower than on the same date in 1957.

USDA's report is based on an annual survey, still about 20% incomplete, conducted in cooperation with the National Agricultural Chemicals Assn.

Larger carryovers of newer materials than in 1957, especially organic phosphates and weed killers, were more than offset by shorter inventories of DDT and grain and soil fumigants. Stocks of copper fungicides and 2,4-D weed killers were up, but 2,4,5-T holdings changed little. Primary stocks of chlorinated hydrocarbon insecticides averaged about the same as in 1957.

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Heavy Inventories May Merely Indicate Search For New Pesticide Uses

By JOHN CIPPERLY

Croplife Washington Correspondent

WASHINGTON—Officials of the U.S. Department of Agriculture have provided for Croplife background information concerning the official report on the inventories of pesticidal chemicals as of Sept. 30, 1958. They disclose that there is a changing use pattern, disturbed in most instances by the progress of the pesticidal

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Pesticide-Wildlife Appropriation Uses Listed by Interior

WASHINGTON—How the Department of Interior will spend \$280,000, appropriated last July under the Magnuson Bill (S.2447) for pesticide-wildlife investigation has been explained in Washington. The January NAC News and Pesticide Review published a breakdown on how the appropriated monies will be spent for these investigations.

Research will be carried out both at the Patuxent Research Refuge, Beltsville, Md., and the Denver Wildlife Research Laboratory.

Three basic research projects have been slated for the Patuxent station: pesticide toxicology on wildlife, residue analysis and continuation of studies on the fire ant. Work at the Maryland station will also include continuation of contract investigations with Alabama and Louisiana on the fire ant, the effects of pesticides on migratory birds, a compilation of data based on laboratory work at both Patuxent and Denver, and analytical service for cooperating agencies.

Work at the Denver laboratory will include continuation and expansion of grasshopper studies started in the summer of 1958, study of toxicity levels of herbicides as they affect forest insect control measures and the effects of pesticides on fish populations.

Not slated for immediate study at either station are investigations into evaporation control agents or studies on the effects of household detergents and radioactive wastes on fish and wildlife.

Actually the full \$280,000 authorization for studies will not go into effect on a yearly basis until July 1, 1959. But a prorated share—\$181,000—for the balance of this fiscal year was appropriated so that studies might begin immediately after passage of the bill.

Northwest Conferences Get Results of Latest Insect Control Research Findings

PORTLAND, ORE.—A record attendance of federal, state college and private industry entomologists and agricultural chemical specialists was noted during the series of conferences held here Jan. 19-23.

Ralph Downing, Summerlin, B.C., Canadian Department of Agriculture entomologist, was elected new chairman of the 33rd annual Western Cooperative Spray project to succeed

Dr. Harold Madsen, Berkeley, University of California entomologist.

Other new officers of this group are Anton Horn, Boise, University of Idaho entomologist, secretary-treasurer, and Floyd Ellertson, Hood River, Oregon State College branch experiment station, vice chairman.

John T. Coke, Portland, was named chairman of the Northwest Agricultural Chemicals Industry conference to succeed George Kitzmiller, also of Portland. Mr. Coke is with the Nautack Chemical Division of the U.S. Rubber Co., while Mr. Kitzmiller is with Pacific Supply Cooperative Assn.

Charles Doucette, Sumner, Wash., U.S. Department of Agriculture research entomologist, was elected to succeed Robert W. Every, Corvallis, Oregon State College extension entomologist, as president of the 18th annual Pacific Northwest Vegetable Insect conference.

Other officers of this technical group are Roland Portman, Moscow, Idaho, University of Idaho extension entomologist, co-chairman, and Howard Dorst, Logan, Utah, USDA research entomologist, secretary-treasurer.

Charles O. Barnard, San Jose, Western Agricultural Chemicals

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Egyptian Firm Gets Expansion Credit

WASHINGTON—A credit of \$5 million to an Egyptian fertilizer company to finance purchases of equipment in the U.S. for an expansion of its operations was announced Jan. 25 by Samuel C. Waugh, president of the Export-Import Bank of Washington.

The credit was authorized recently by the board of directors to Societe Egyptienne d'Engrais et d'Industries Chimiques, S.A.E., of Cairo. The company's fertilizer plant, built at Suez between 1948 and 1950, was provided with equipment from the U.S. under earlier Eximbank credits of about \$7.2 million which have been paid in full.

Under the expansion program, the Egyptian fertilizer company will enlarge its ammonia production facilities by 50%. The additional ammonia will be used with sulphuric acid to produce ammonium sulphate. Chemical Construction Corp., New York, which carried out the engineering design and related studies for the original plant, will act as engineer on the expansion program.

USDA Committee Lists Fertilizer Study Needs

WASHINGTON—In the field of fertilizers, the top need is for research leading to development of fertilizers having controlled rates of nutrient release, said the U.S. Department of Agriculture's soils, water and fertilizer research advisory committee at its annual meeting here recently.

Other pertinent needs listed by the committee were research on agricultural watershed runoff, forest management to increase water yields, woodland drainage control, analysis of soil organic matter transformation and waterways and gully control.

Among the members present at the meeting was Dr. Russell Coleman, executive vice president of the National Plant Food Institute.

Borax Firm Installs Herbicide Facilities In Texas Plant

LOS ANGELES—Installation of new equipment at Ft. Worth, Texas, to manufacture liquid weed control materials for railroad use has been announced by Pacific Coast Borax Co., division of United States Borax & Chemical Corp.

Operation of the new equipment, which will serve railroads of the Ft. Worth-Dallas area, will begin this spring, a spokesman said. Concurrently, the company's Slaton, Texas, plant will be closed, and the more centrally located new Ft. Worth installation will make weed control formulations available to all lines serving the Southwest.

Operation of the new facility will be under the direction of the agricultural sales department of the Pacific Coast Borax Co.

The new equipment will permit modification of standard formulations for special weed problem application, the spokesman said.

Announcement has also been made of the establishment of similar new facilities by the United States Borax & Chemical Corp. at its Butte, Mont., plant site to serve the major railroads of the Northwest.

Mississippi Conference Gets Pest Control Recommendations

STATE COLLEGE, MISS.—Highlights of insect control research were given some 300 insecticide dealers, formulators, entomologists, farmers and agricultural workers attending the fifth annual Mississippi Insect Control Conference at Mississippi State University, Jan. 8-9.

Control of cotton insects, livestock pests, insects attacking forage and seed crops, forest insects and termites were discussed by leading research authorities.

Research reports on controlling boll weevils and other cotton insects were a highlight of the conference.

C. F. Rainwater, head of the Cotton Insect Section, U.S. Department of Agriculture at Washington, D.C., told the group that "high powered in-

secticides are not the final answer to boll weevil control." But he added that cotton growers would likely have to depend on these for control during the next few years.

"It is my belief that an all-out research program could eradicate the boll weevil far easier than some other insects," Dr. Rainwater said. "One reason for this is that the boll weevil depends on one crop for feed and reproduction, and must hibernate in the winter."

The USDA entomologist cited research work in plant breeding to develop cotton varieties resistant to boll weevils; research with systemic insecticides; and use of sterile male weevils, similar to the present screw

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Committee of Control Officials, NPFI to Update Magruder Sample Check Program

By Vincent Sauchelli
Chemical Technologist
National Plant Food Institute
Washington, D.C.

CHEMICAL control chemists of both industry and state laboratories are being requested to participate in a revised organization of what has been known since 1922 as the "Magruder Check Fertilizer Sample Work." In that year E. W. Magruder, chief chemist for the F. S. Royster Guano Co., initiated the plan to send a sample of fertilizer to a number of fellow chemists to check the effectiveness of their methods and techniques.

It is a great help to a working chemist to be able to do this. He might be getting wrong results from time to time without knowing it and continue doing so for some time before finding it out. The check sample plan enables him quickly to compare his results with other chemists analyzing the same sample and if they vary significantly from the general average he can promptly investigate and make the necessary corrections.

The work started with about 30 participating chemists. Gradually the number increased until by 1958 the number reached 129, about equally divided among fertilizer,

commercial and state control laboratories. Since 1922 the burden of preparing and distributing the sample and the compiled chemical analyses was carried exclusively by Royster. For this it has earned the gratitude and appreciation of all participants.

In recent years statistical techniques have been introduced into many industries and research laboratories. It was to be expected that this influence would make itself felt in the check sample work. An increasingly urgent need was voiced to modernize the Magruder check sample plan by including statistical and other studies and broadening its scope. Suggestions regarding ways and means of reorganizing this work were first broached at the 1957 NPFI Conference on Chemical Control Problems.

An advisory committee was organized to study the suggestions and consult with Royster Guano. This group held several meetings and worked up a plan which has finally been shaped into a definite basis for the new series. The plan is acceptable to the original sponsors and is being distributed among all the old list of participants and many additional laboratories for their acceptance.

Beginning in January, 1959, the Magruder Check Fertilizer Sample started a new series under a new sponsorship. A joint committee of the Association of American Fertilizer Control Officials and the National Plant Food Institute has taken responsibility for the program as follows:

For AAFCO—Henry Davis (New Hampshire), C. W. Gehrke (Missouri), F. W. Quackenbush (Indiana), Stacy B. Randle (New Jersey); for the fertilizer industry—J. R. Archer (International Minerals & Chemical Corp.), C. H. Perrin (Canada Packers, Toronto, Canada), S. F. Thornton (F. S. Royster Guano), V. Sauchelli (NPFI), chairman.

The new series will be continued to accord with its original purpose, to provide participating laboratories an opportunity to check on performance in relation to other laboratories. In addition the new program provides these features: (1) Statistical design to permit analysis of the data and reports which are more meaningful than a simple listing of averages; (2) samples derived from purified salts which are of known composition; and (3) fertilizer samples of uniform particle size as well as "run-of-the-mill" samples.

The secretary-treasurer of AAFCO will issue application forms for participation and act as treasurer. A nominal fee of \$18 a year is to cover cost of preparing and distributing 12 samples a year. The statistical work will be done free of cost the first year by the statistical department of W. R. Grace & Co., Washington research division, and the monthly summary of the report will be prepared and distributed by NPFI.

This new check sample program should appeal to all laboratory supervisors as well as the working chemists. The opportunity to evaluate the accuracy and precision of a laboratory's operations afforded by this new series should not be allowed to slip by. In the course of a year very valuable information can be accumulated by each participant and the net result generally should be an improvement in the quality of chemical analysis in our industry. This work meshes in very well with the major research project on sampling and chemical analytical methods currently underway which is sponsored by NPFI with the cooperation of the Association of Official Agricultural Chemists and AAFCO.

Insecticide, Potash Reduce Corn Lodging

ST. PAUL—Potash fertilizer and an insecticide sometimes can help reduce the lodging problem in corn. Three University of Minnesota extension specialists found this true in demonstrations last summer in Nobles County.

Where they sprayed 1½ lb. of dieldrin per acre on the soil surface, there was much less corn down than in plots not treated. Using the dieldrin treatment and 47 lb. of potash per acre also resulted in less lodging.

Also, using both dieldrin and potash resulted in fewer broken and leaning plants than where the extension men had applied dieldrin alone.

California Farmers Welcome Heavy Rainfall

SACRAMENTO—Heavy rainfall, coupled with above normal temperatures, has brought a new lease on life to seeded grain crops as well as winter range in California.

The soil is now moist enough to seed more barley, wheat and oats. A limited acreage of sugar beets was planted before the rains and conditions are favorable for plantings along the coast and in the Sacramento and San Joaquin valleys.

The downpour also was welcomed by fruit and nut growers who were able to halt irrigation and begin dormant oil spraying. Despite the germination of seed and the growth of forage, stockmen expect to continue heavy supplemental feeding.

ABATEMENT MEASURE

SACRAMENTO—Fertilizer plants, canneries, oil refineries and similar establishments would be subject to state abatement under the provisions of Senate Bill 84 now before the California Legislature. The author of the bill, Sen. Robert I. Montgomery of Hanford, said that such plants are not covered by the law on industrial nuisances. At present the state has no authority to restrain their operations by injunctive proceedings.



AWARD WINNER—Albert Plant (left), Colorado Springs, Colo., was recently awarded a \$200 prize at Colorado State University for winning the title of "Outstanding Senior in Agronomy." The prize is awarded annually by the National Plant Food Institute to a Colorado State University senior selected on a basis of scholarship, leadership and promise of success. The award was presented by Dr. Richard B. Bahme, western regional director of NPFI (right), during the annual CSU Fertilizer Conference held Jan. 6.

Frank McKennon Named Oregon Agriculture Head

SALEM, ORE.—Frank McKennon, chief of the Oregon State Department of Agriculture's plant industry division for the past 23 years, is the new director of agriculture. He was recently appointed to succeed Robert J. Steward, resigned, who will become chief clerk of the Oregon legislature's Joint Ways and Means Committee.

LETTUCE FIELD DAY

MELOLAND, CAL.—The University of California, department of vegetable crops, will sponsor a lettuce field day at its Imperial Valley Field Station here Feb. 12, 1959, according to an announcement by the California Fertilizer Assn.



Dr. Bruce D. Gleissner

WITH FRONTIER—Wesley Sowers, president of Frontier Chemical Co. division, Vulcan Materials Co., Wichita, Kansas, announced the affiliation of Dr. Bruce D. Gleissner with Frontier as vice president and technical director. Dr. Gleissner will be responsible for the production facilities of Frontier's Wichita and Denver City, Texas, plants and will also be in charge of all technical operations, engineering and the expanded research and development program. Dr. Gleissner holds degrees from Kansas University and Ohio State University. From 1940 to 1944 Dr. Gleissner was a member of the staff at Penn State University School of Agriculture. In 1944 he joined American Cyanamid Co. and was assigned with that organization at Stamford, Conn., and New York City as a research biologist and subsequently as manager of the insecticide department of its agricultural chemicals division. In January, 1954, Dr. Gleissner became assistant general manager of the chlorinated products division of Diamond Alkali Co. and worked at Cleveland, Ohio, in research and development, sales, manufacturing and engineering facets of the Diamond Alkali operation. Concurrently, he was vice president of Diamond Black Leaf Co., a subsidiary.

Illinois Pathologists Review Plant Insect, Disease Situation at Canners' Meeting

URBANA, ILL.—Early signs indicate that European corn borers in Illinois will be more numerous in 1959 than they were in 1958.

H. B. Petty, extension entomologist, with the University of Illinois and Illinois Natural History Survey, reported at a recent Illinois Canners School here that the first-generation corn borer population was greater in 1958 than in 1957. This fact is based on a survey Mr. Petty and other entomologists conducted in the fall of 1958. Most borers are located in the west-central and northwestern sections of the state.

Other insect outlooks show that the chinch bug population is light in eastern Illinois. It is also light in one small area in DuPage, Kane and Kendall counties. In an area running from central to western Illinois, numbers are moderate.

Grasshopper populations are generally low throughout the state except for one small area in the southeast.

In 1958, Mr. Petty reported that corn earworm populations were extremely low. Only in the southern one-third of the state did field corn suffer damage. And this damage was light. Sweet corn in the northern two-thirds suffered some damage, but it was lighter than in previous years.

On the other hand, corn sap beetles have been increasing for the past few years. Mr. Petty says this pest may cause more trouble in the future.

Northern corn leaf blight, the same disease that was responsible for widespread yield losses in field corn in

1957, was the most serious Illinois sweet corn disease in 1958.

M. P. Britton, another University of Illinois extension plant pathologist, told the canners that much of the late-planted commercial sweet corn acreage was damaged. Fields maturing during the last two or three weeks of the packing season took the heaviest losses.

Mr. Britton reports that the time when the disease first appears is set largely by weather conditions. He blames the cool, moist 1958 spring and early summer for the heavy sweet corn infection.

Northern corn leaf blight can be controlled by proper fungicides. Maneb and zineb sprays as often as twice a week during the pretassling period will hold the disease in check, he said.

Ripe rot or anthracnose in tomatoes overwinters principally in tomato skins and vines left on home gardens and commercial fields, according to M. B. Linn, University of Illinois plant pathologist.

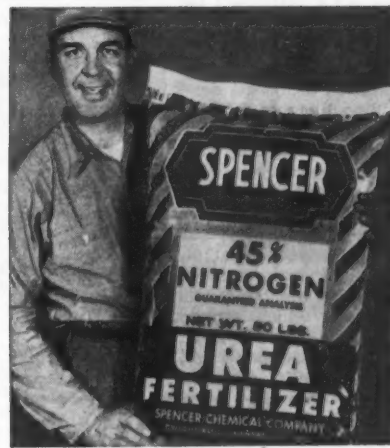
Mr. Linn says it will not help to clean up gardens now, but he suggested that home gardeners who did not clean their plots last fall plan spray treatments to control ripe rot next year.

The disease can be controlled by proper use of fungicides. Mr. Linn recommended maneab, zineb, captan or ziram in five or six applications, starting about two weeks after flowering and spraying every ten days thereafter. Both foliage and fruit must be completely covered with the spray.



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INSECT AND PLANT DISEASE NOTES

Hoppers Lead Long List of Destructive Insect Pests in Colorado During 1958

FT. COLLINS, COLO.—Rangeland in Colorado suffered the greatest loss from insects in 1958, according to the year-end summary of the Colorado Insect Detection Committee.

Most damage on the range was caused by grasshoppers, even though some 2 million acres were sprayed. Value of the range loss, computed from the amount of gain by a cow and calf on ten acres of land, was estimated at \$5 million.

Grasshoppers, which were named in the report as the No. 1 insect pest, infested 5.8 million acres of range. Total acreage of rangeland in Colorado is 27.3 million acres.

Spraying operations, however, effected a savings of \$2.7 million at a cost of \$935,000. Grasshopper damage also occurred in wheat, alfalfa, barley, corn and sugar beets.

Other 1958 crop pests, in order of importance, were beet leafhopper, lygus bug, two-spotted spider mite, corn earworm, fall armyworm, alfalfa weevil, potato psyllid, Harlequin cabbage bug and variegated cutworm.

Of all producers, potato growers

gained the most from spray operations. Although insects damaged more than \$400,000 in potatoes, control measures saved an estimated \$16.3 million. Cost of the control was \$261,000.

Potato damage was caused by the potato psyllid, green peach aphid, potato aphid, flea beetles, leaf hoppers, false chinch bugs and variegated cutworm.

Control measures also were effective in other crops. Major savings were estimated as follows:

Alfalfa, \$7 million; silage corn, \$5 million; wheat, \$4.6 million; apples, \$1.6 million; onions, \$1.5 million; peaches, \$1.4 million; and lettuce, \$1.2 million.

For all crops, producers spent a total of \$2.7 million on insect controls. As a result, their savings amounted to more than \$55 million. For every dollar invested in control, producers recovered \$20 in value of their crops.

The annual survey of insect damage was prepared by Leonard Jenkins, junior entomologist with the Colorado State University Experiment Station.

Insects Cause Loss Of \$11 Million to Utah Crops in 1958

SALT LAKE CITY—A heavy infestation of insects dealt Utah an \$11 million blow in 1958, crop estimates from the U.S. Department of Agriculture Marketing Service show.

Estimated crop value at harvest time dipped from \$73,013,000 in 1957 to \$61,948,000 for 1958 for 32 major crops grown in the state. Insect invasions caused most of the loss, department spokesmen indicated.

Among the hardest-hit crops were potatoes, which dropped 31% from 1957 to \$1,938,000 valuation in 1958; and tomatoes, down to \$333,000 from the \$1,615,000 posted in 1957. The tomato crop was severely damaged by beet leafhoppers last spring.

Sugar beet production was down 10% in 1958 to \$5,014,000. Combined grain crops were valued at \$21,542,000—a 17% dip from 1957.

Fruit crop valuation was put at \$4,919,000 last year, 6% below 1957. Combined vegetable crops for canning processing and fresh use also took a severe beating, slipping 39% from 1957 to \$3,111,000.

Hay crops, a major factor in the state's agricultural economy, were down 11% at \$22,448,000.

The state's 1959 wheat harvest is estimated at 15 bu. per acre with production estimated at 2,910,000 bu.

LOCUST WARNING

ROME—A "maximum scale" campaign has been called for by the Food and Agriculture Organization to combat the desert locust in the Arabian Peninsula in the coming year.

The locust situation has been described as "grave." The FAO Arabian Peninsula Desert Locust Control Sub-Commission, which met recently in Cairo said the situation, "with the swarms that have already reached the Peninsula and the continuing threat of further invasions from Africa—is sufficiently grave to require preparations for a campaign on the maximum scale possible."

FAO has the responsibility for coordinating international action against the desert locust in that region.

Wet Weather Would Increase Plant Disease

AMES, IOWA—Plant diseases will be serious problems in Iowa this year if 1959's spring and summer are wet, Malcolm Shurtleff, plant pathologist at Iowa State College, said recently.

Disease problems will be moderate if the spring and summer periods have normal amounts of rainfall, says Mr. Shurtleff. Dry years reduce the extent of most disease damage even further, he said. One exception to this rule of light disease action in dry years occurs in the case of evergreens, Mr. Shurtleff pointed out. Evergreen browning and needle drop are most severe in dry springs and summers.

Mr. Shurtleff said a cool, wet year generally results in heavy disease losses. A wet spring or summer would probably increase the presence of foliage diseases in Iowa soybean fields. Wet weather would also be likely to cause serious damage from rusts, scab and blights in oats, wheat and barley.

In addition to these diseases, Mr. Shurtleff said stem and root rots, leaf spots, blights and damping-off would be more prevalent in field crops, vegetables and flowers during a damp season.

Other diseases and the crops most likely to be affected in wet weather are: potatoes and tomatoes—blights and tuber and fruit rots; apples and pears—scab, fire blight and rusts; grapes—black rot and downy mildew; strawberries—foliage diseases, fruit rots and root rot. Leaf spots, blights and rusts would be the most serious wet weather diseases to trees and shrubs, says Mr. Shurtleff.

Weevil Hibernation Down in North Carolina

RALEIGH, N.C.—Only about one third as many boll weevils went into hibernation in North Carolina last fall as in the fall of 1957, according to a study reported by George D. Jones, in charge of extension entomology, North Carolina State College.

Mr. Jones said that the study was made in the three areas of the state—southern and lower coastal, middle and eastern and upper or northern—and all showed uniform data, with no exceptionally high or low figures.

Wisconsin Survey Shows Reduced Borer Population, Heavy Hopper Count

MADISON, WIS.—Wisconsin's 1958 fall European corn borer survey revealed that the population of this insect was at its lowest level in the past decade. The figure of 15 borers per 100 plants is less than half the 36 average of 1957.

The northwest and east central districts were the only districts to show minor increases. The biggest decline in infestation occurred in the southwest district which dropped from 91 borers per 100 plants in 1957 to 20. A similar decline was observed in the west central district, although it wasn't as large.

Losses caused by corn borer feeding were less than .5% of the total value of Wisconsin's 1958 corn crop. More destructive than corn borers were the soil insects. Wireworms, cutworms, the northern corn rootworm and the seed-corn maggot are included in this group.

Although the overwintering corn borer population is low, favorable weather during the 1959 growing season and a small carryover of parasites could result in a considerable increase of borers, according to the Wisconsin Cooperative Insect Survey.

Heavy grasshopper populations in Central Wisconsin were revealed by the 1958 adult survey conducted jointly by federal and state agencies.

A later survey showed grasshopper eggs were more numerous in Central Wisconsin following the pattern established by the adult population.

Early in the 1958 growing season, grasshoppers presented a threat to forage in the area extending across the central one-third of the state. Cool weather and heavy precipitation retarded their development and held the damage to a minimum. Losses were estimated to be less than half a million dollars and were less than in 1957.

Widespread Fungi Outbreak Found in California

RIVERSIDE, CAL.—Widespread infestation of irrigation waters by Phytophthora brown rot fungi, which attack roots of citrus, have been found by University of California scientists.

Of 12 canals and three reservoirs tested in five counties, all canals and one reservoir yielded one or more species of Phytophthora that can cause major losses to citrus growers.

The fungi were found by Po-Ping Wong, Citrus Experiment Station researcher, in a survey under the direction of L. J. Klotz, plant pathologist.

Wide distribution of these fungi was demonstrated in Riverside, San Bernardino, Los Angeles, Orange and San Diego counties. Surveys in other counties are planned.

"Practically every orchard has or will have these fungi because of contaminated seedlings and nursery plants and infested irrigation water," says Mr. Klotz. "Until a safe means of disinfecting the water is found, growers should use all available means to delay root infection."

Disease Causes \$156 Million Loss In Texas Cotton

COLLEGE STATION, TEXAS—Diseases took a \$156 million bite out of the 1958 Texas cotton crop, report 15 cotton specialists located throughout the state.

"Cotton diseases kept at least 930,000 bales of cotton from being marketed," said Harlan Smith, extension plant pathologist, who compiled the information of the Cotton Disease Council.

Besides the \$156 million cash loss to producers, there were losses of business to farm labor, railroads, trucking companies, suppliers, compress companies, storage facilities and other phases of the industry. Diseases also were a major factor in grade reduction and a limiting factor in yield.

This loss occurred even though 1958 growing conditions were generally good as record yields were harvested in many areas, Mr. Smith said.

Major diseases and estimated loss due to their effect on yield were bacterial blight, 7.31%; root rot, 3.18%; verticillium wilt, 3.06%; seedling diseases, 3.0%, and boll rots, 0.92%. Other diseases causing losses were root knot nematodes, fusarium wilt and ascochyta blight.

These average figures don't give the true picture because in areas where diseases struck the hardest losses ran into ruinous figures, pointed out Mr. Smith. For example, root rot was estimated to have caused a 25% loss in the Central Blackland area. Seedling diseases were especially damaging in the Lower Rio Grande Valley and in some North Texas areas. Bacterial blight caused damage throughout most of the state.

Austrian Field Pea Discovered in Canada

OTTAWA—The weed, Austrian field pea, invaded Canada for the first time in 1958. The lone plant was found near the edge of a small slough on a road allowance in the Maple Creek district of Saskatchewan. Several years ago, drilling rigs from across the border ran tests in the area and stopped at the slough for water. It is thought that the seed may have been introduced by the rigs. It has been declared a noxious weed in Colorado. Maple Creek is located roughly 70 miles north of the Montana border and less than 30 miles from the Alberta boundary.

Corn Disease Causes Big Loss in Illinois

URBANA, ILL.—Corn disease losses add up to big business—they cost Illinois farmers an estimated \$70,000,000 every year, according to A. L. Hooker, University of Illinois plant pathologist specializing in corn diseases.

Mr. Hooker is heading research efforts to cut these losses. His research program is part of the over-all effort of the comparatively new plant pathology department of the College of Agriculture. Mr. Hooker estimates that about 25 diseases affect the Illinois corn crop.

BUGS IN THE BIRDS' NESTS

AMES, IOWA—Lovers of birds' nest soup will be dismayed to learn that in its raw form the main ingredient of this gourmet dish contains unexpected extra nourishment. In fact, says Ellis A. Hicks, birds' nests are buggy. Mr. Hicks, who is professor of zoology and entomology at Iowa State College, proves his point with his new book, "Check-List and Bibliography on the Occurrence of Insects in Birds' Nests," just released by the Iowa State College Press. More than 2,000 entries in the 681-page book list types of insect which have been discovered in birds' nests in the past 150 years. The list is world-wide in scope, covering 18 orders of insects and 26 orders of birds. Birds' nests not only furnish housing and food for some insects, says Mr. Hicks, but the life cycles of several parasitic insects appear to depend upon the nest and the presence of the bird as a host. Such parasites cause discomfort to adult birds, and perhaps even death to the immature fledglings.

Sheep-Killing Weed Spreading at Alarming Rate in Oregon

PORTLAND, ORE.—A sheep-killing weed that threatens more than a third of the flocks in the U.S. is spreading "at an alarming rate" in southeastern Oregon.

This warning comes from George D. Lea, range conservationist for the State Bureau of Land Management office here.

The weed is halogeton, a purple-stemmed bush that is a "cousin" of some kinds of tumbleweed. It thrives in semidesert areas where other vegetation is sparse, and in late fall when other range foliage becomes scarce halogeton looks and tastes good to hungry sheep.

But the spongy leaves of the poisonous plant are filled with oxalic acid, which combines chemically with calcium in the blood and kills sheep within a few hours. Many sheepmen have abandoned their ranches, leaving behind the bleached bones of their poisoned sheep.

There is no effective treatment for the animals after they have eaten halogeton, and the weed has survived attempts to wipe it out.

Mr. Lea said that until 1957 the stock-killing weed in Oregon was restricted to two small spots in Malheur County. But since then it has spread at an alarming rate, endangering several million acres of range, he said.

Mr. Lea believes halogeton seeds have been carried into Oregon by equipment and importation of hay, from a huge infested area in Nevada. New infestations have been discovered in Oregon along highway 95 north of McDermitt, Nevada.

The Oregon Highway Department, the State Department of Agriculture and county weed control committees are cooperating in trying to discover and control new infestations before they spread. The highway department has seeded approximately 40 miles of rights-of-way to range grasses to crowd out halogeton.

Plans for this year, Mr. Lea said, are to spray portions of the highway rights-of-way in an effort to kill the weed and to sterilize the soil in existing infestations to prevent the halogeton seeds from germinating.

Four New Khapra Beetle Outbreaks Found

SACRAMENTO — Four recently uncovered infestations of Khapra beetle, the first to be turned up in seven months by inspectors of the California Department of Agriculture, are due for immediate fumigation.

Ron Hawthorne of the State Bureau of Entomology, said two of the infestations are in Riverside County, one in Imperial County and one in Madera County. Two were new outbreaks of infestations previously noted and two were new infestations.

Before these latest discoveries, state pest control experts had over a three year period located and apparently controlled 333 infestations of Khapra beetle.

Severe Hopper Year Seen in Saskatchewan

REGINA — The 1959 grasshopper forecast map for Saskatchewan indicates the largest outbreaks since 1950 and the possibility that 1959 may rank with some of the most severe grasshopper years on record.

About 140 of Saskatchewan's 300 municipalities are expected to do battle with grasshoppers. Most severe infestations will be in southern districts with a few small areas in the "very severe" category.

In preparation for the 1959 campaign the Saskatchewan Department of Agriculture has completed arrangements for preparation of sufficient dieldrin poison to spray over seven million acres. The quantity is believed to be a record of its kind for insect control in Canada.

Crops Suffer Little Rust Damage in 1958

ST. PAUL — Minnesota's grain crops were bothered less by rust diseases last summer than they have been for a number of years. Neither leaf rust nor stem rust caused any important loss in wheat, oats, rye or barley in Minnesota or elsewhere in the Mississippi Valley region.

According to J. J. Christensen, head of the plant pathology and botany department at the University of Minnesota, cool weather in the South and the wind direction were the main reasons why the grains escaped the rust onslaught.

Dr. Christensen explains that rust disease overwinters in the "red" state in southern states and the spores are blown into Minnesota. But with cooler weather, there was a smaller amount of the spores present in the South and, second, the wind often did not blow in a direction bringing them into this area.

One disease — stripe rust — appeared for the first time in Minnesota last summer. It was first seen in June on winter wheat in McLeod County and later showed up on wheat plots at University experiment stations at Rosemount, Waseca, Grand Rapids, Morris, Crookston and on plots near the St. Paul campus.

Stripe rust occurred on Mindum, Langdon, Yuma and some other wheat varieties. There was no infection seen on Sentry, Ramsey or Towner, but Dr. Christensen says more tests are needed to definitely determine which varieties are resistant to the rust.

Dr. Christensen says stripe rust is a "cool weather" disease, which explains its wide appearance in 1958. It was first recognized in the U.S. in 1915 and since then has been reported in mountain regions of the West.

Alfalfa Weevil Threat To Virginia Farms

BLACKSBURG, VA.—Most areas of Virginia will have to do battle with the alfalfa weevil this year. Arthur P. Morris, associate entomologist at Virginia Polytechnic Institute, reports that the alfalfa weevil has been found in all but six counties in Virginia—Washington, Scott, Lee, Wise, Buchanan and Dickenson. And the insect will probably show up in those counties before 1960.

Soil Insecticide Use Grows in Illinois

URBANA, ILL.—The number of acres treated with soil insecticides in Illinois increased from 650,000 in 1957 to 800,000 in 1958. This increase, says J. H. Bigger, Illinois Natural History Survey entomologist, indicates that farmers are becoming more aware of the value of applying soil insecticides.



The Big News for 1959

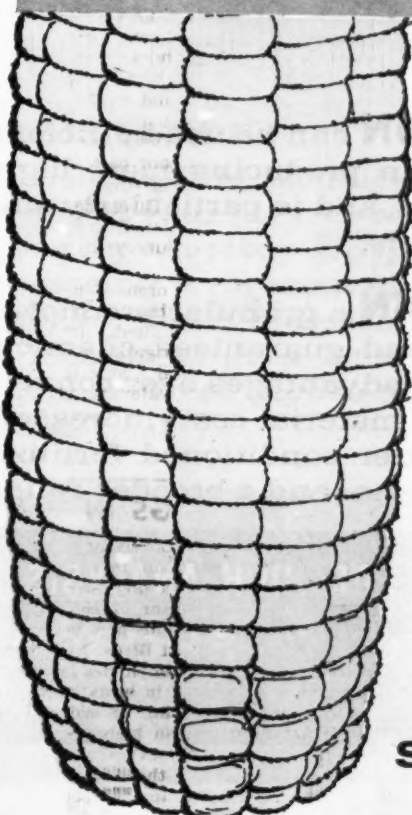
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U.S. Phosphoric To Produce New Fertilizer Material

TAMPA—U.S. Phosphoric Products Division, Tennessee Corp., has announced the construction of a plant at East Tampa for the production of a modified diammonium phosphate, to be marketed under the trade name of "Di-MōN."

The company said that the new product is a granular material, 95% of which is sized in the range 6-16 mesh, especially produced and sized for use in mixing, granulation and in direct application to the soil. Made from wet process phosphoric acid, the plant food content of the new product is approximately 95% water soluble. Its analysis is 18-46-0.

The new plant utilizes a process

developed in the research and development laboratories of U.S. Phosphoric Products, the company said. For the past one and a half years the product has been produced in pilot plant quantities on a continuous basis. Bulk and bagged carload lots have been shipped to a large number of the fertilizer manufacturers, for experimentation in their processing equipment.

The new plant, is expected to be on stream April 1, 1959.

The producer of "Di-MōN" has located a number of its technical staff at locations in the Midwest and West to provide technical service to the industry.

The firm said that "Di-MōN" has been used successfully in complete granulation units, batch type granulators and dry mixing, in commercial quantities.

It stated that fertilizers of the following analyses are some of the grades that have been produced successfully, using a variety of phos-

phatic, nitrogenous and potash materials for complete formulation: 5-20-20, 6-24-24, 10-20-20, 8-24-24 and 15-15-15.

Elm Leaf Beetles Found in Kansas

MANHATTAN, KANSAS—Elm leaf beetles have been reported in Kansas for the first time, according to Hugh Thompson, entomologist at Kansas State College, Manhattan. He identified the beetles from specimens sent in by a Dodge City housewife. Elm leaf beetles long have been a serious pest of elms east of the Mississippi River. But only in the last few years have they been a problem west of the Mississippi.

ARKANSAS FERTILIZER SALES

LITTLE ROCK, ARK.—Fertilizer sales in Arkansas during December, 1958 amounted to 5,434 tons or 536 tons more than December, 1957.



J. C. Frankenfeld

TECHNICAL DIRECTOR—The appointment of J. C. Frankenfeld as director of technical service of Arwell, Inc., Waukegan, Ill., pest control firm has been announced by W. W. Scott, president. The position is a newly created one. In his new post, Mr. Frankenfeld will assume responsibility for all phases of technological and entomological activities involved in Arwell's service program. He will also be available to grain operators desiring assistance in solving infestation and aeration problems. Mr. Frankenfeld was associated with the U.S. Department of Agriculture for 24 years. During his government service he was in charge of insect test materials at the Bikini bomb experiments, and later he was appointed as the U.S. delegate to the meetings of the Food and Agriculture Organization of the United Nations.

Penn State to Hold Annual Conference

UNIVERSITY PARK, PA.—Pennsylvania State University has announced its annual fertilizer conference to be held Feb. 11-13 in the assembly room of the Nittany Lion Inn here.

H. R. Albrecht, director of the agricultural extension service; H. B. Sprague, head of the department of agronomy; A. C. Richer of the agronomy department, and H. R. Fortmann, assistant director of the agricultural experiment station, will serve as chairmen of the four half-day sessions.

One evening session which consists of a banquet also is scheduled, with R. E. Larson, head of the department of horticulture, serving as toastmaster.

Some of the subjects which will be discussed at the session include the following: "Economics of Fertilizer Use in Pennsylvania," F. A. Hughes, Pennsylvania State University; "Liquid Fertilizer—Present and Future," E. W. Harper, Allied Chemical Corp.; "Nitrogen Test Demonstration Farm," J. H. Eakin, Jr., Pennsylvania State University, and "Using a Soil Map in Fertilizer Sales," R. Feuer, Cornell University.

NPFI Sponsors Ohio Fertilizer Sales School

COLUMBUS, OHIO—A Fertilizer Salesmen's School, under the sponsorship of the National Plant Food Institute, will be held Feb. 4, at the Deshler-Hilton Hotel here, announced Russell Coleman, NPFI executive vice president.

The meeting is open to all fertilizer salesmen operating in Ohio, who represent either members or non-members of NPFI, Mr. Coleman said.

Included in the program are films and talks on selling, and a noon luncheon.

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In feed and seed stores, hardware outlets, ag implement showrooms, fertilizer dealerships, up and down Main Street—SUCCESSFUL FARMING farmers are setting buying records, today!

Following 1958, a year of unprecedented output and income, SUCCESSFUL FARMING farmers, the country's best, are your best fertilizer customers and prospects.

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averaging more than 300 acres, and in the aggregate SF farmers own or operate more than 352,000,000 acres!

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WIDE OPEN DISPLAYS are a feature of Landis Bros. in Lancaster, Pa. Mass insecticide and farm chemical display such as the one in the upper left photo prompt farmers to buy when visiting the store on other matters. The



setup for power mowers and other equipment, as shown in the upper right photo, helps the company to do a big business in those items, says E. K. Landis, owner.

Displays Key to Dealers' Increased Sales

By AL P. NELSON

When the farmer walks into the modern farm supply store today, he will buy from one to ten items on that single trip—provided that most of those items are well displayed in a clean, attractive, well lighted store.

That's the case at Landis Bros. in Lancaster, Pa., where a big 50 ft. wide and 35 ft. deep showroom contains a great deal of merchandise which the farmer buys.

Initially the store was a John Deere implement dealership and existed as such for many years. But, as E. K. Landis, the owner, says, in

this day of mechanized farming and competition, his store needs extra lines. So, several years ago he added what are his chief related lines, and there are many of them.

They include: Dry fertilizer, farm chemicals, sprayers, garden tractors, power mowers, dairy bulk tanks, dairy utensils, garden and lawn tools, barn tools and brushes, rust preventives, lawn rollers, seeds, farm hardware.

"Farmers who come here to inquire about farm implements or fertilizer, for instance, like to browse

about our store, and they often buy a number of other items," states Mr. Landis. "We need those extra sales in order to attain the kind of profitable volume we want. We think that this farm supply store plays a mighty important part in our business and will continue to do so."

Take, for instance, the steel goods line at this store. One grouping of rakes, hoes and leaf rakes, is mounted on a wooden stand with rollers. It's a simple matter for clerks to push this stand around seasonally to any part of the store for better display.

Another long wooden rack, not on wheels, is about 15 ft. in length and on it such staple items as pitchforks, shovels, barn brushes, barn brooms, handles, etc., are shown. On the average dairy farm, and there are many in Lancaster County, tools like this are used daily. Farmers know that Landis Bros. has a large supply of

such merchandise and they come here for it. It is not unusual for a dairy farmer to buy two and three items alone from these two important display racks.

A large amount of space is devoted to the showing of garden seeds, insecticides, sprayers and similar material in season. The spray materials are stocked in small and large containers, for the firm sells to farmers who have volume requirements and gardeners who wish smaller amounts.

"Fertilizer and insecticides are two lines that fill in very well here and boost store traffic and volume," states Mr. Landis. "They bring farmers in at a time of the year when we are anxious to sell them other lines as well."

Mr. Landis has gone quite heavily, too, into the sales and service of

(Turn to **DISPLAYS**, page 16)



SPRING DISPLAY—The Holt Lumber Mart in Milwaukee is a hardware, lumber and appliance store that found the value of adding a garden department. So each spring, Graham Holt, the owner, loads up large island displays, with hand sprayers, insecticides, seed, fertilizer, shrubs and garden and lawn tools. Says Mr. Holt, "Many of the suburban home owners have small gardens and need sprayers for garden and lawn jobs. We usually can sell them their insecticides and other spray materials at the same time. Some of our customers spend from \$50 to \$100 every year for their supplies." The store is strictly self-service so all of the related items are placed near each other for impulse sales. The store also rents out garden and other equipment.

SHOP TALK

OVER THE COUNTER



By Emmet J. Hoffman
Croplife Marketing Editor

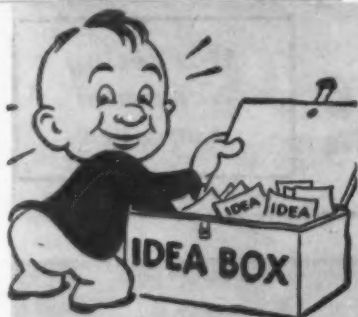
The effectiveness of profit sharing plans has been well established by the hundreds of farm supply retailers using them. Dealers not familiar with these plans may be interested in knowing about the details of one used by a Mankato, Minn., supermarket owner. Its operation might well be adapted to the needs of the typical farm supplier.

The supermarket sets aside 5% of the net profit before taxes for all employees. This amount is distributed on a basis of accumulated points. One point is given to each employee for each six months of service and one point to each employee for each \$100 wages on a yearly basis, up to a maximum of \$3,600 in wages per year. Any amount paid over \$3,600 to any one employee is discounted in the calculation of this profit sharing plan. The store then determines how many points each employee has and adds the total number of points. It calculates the evaluation each point will

have and reverts this to each employee. This figures out to an average of about two weeks' pay per person for full time employment.

The store gives each employee two weeks paid vacation. Each day full time employees are given two 15

(Turn to **SHOP TALK**, page 13)



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6861—Weed Killer Booklets

Two folders reviewing "Diamond Fence Rider" and "Crop Rider Formulations" in handling a wide range of weed-killing and brush-control problems on farms have just been issued by the Diamond Alkali Co. Both folders also include handy, ready-reference wall charts covering specific weed and brush control problems, type of herbicide and quantity of solution required and time-tested application tips. Copies are available free on request. Check No. 6861 on the coupon and mail it to Croplife.

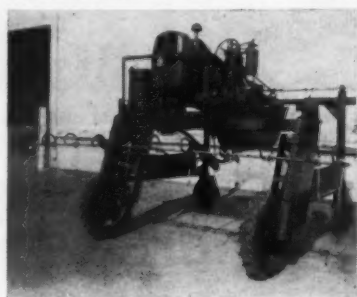
No. 6862—Weed Control Movie

A 12-min., 16 mm. full color and sound movie which describes modern weed control practices has been produced by the Stauffer Chemical Co. The film depicts the most efficient methods of applying both granular and liquid herbicides and illustrates the weed control efficacy of Stauffer's pre-emergence herbicide, Eptam. Also shown are a series of field tests which portray the increased crop yields which result from herbicide treatments. These include such acreage crops as corn, beans, alfalfa and forage legumes, beets and ornamentals. Prints of the film may be

obtained on loan without charge. Check No. 6862 on the coupon and mail it to Croplife.

No. 6859—Sprayer

Fabricated Metals, Inc., announces a new high-clearance, self-propelled adjustable-width sprayer, designed in cooperation with Dr. Lauren D. Anderson of the University of California Experimental Station at Riverside,



Cal. The 75-gal. sprayer is used for both experimental and commercial applications of insecticides, fungicides, herbicides, weed killers, defoliants, and liquid plant food additions. The "Spray Rite" sprayer is used for seed crops, oil crops, flower growers, vegetables such as corn, lettuce, tomatoes, artichokes, celery, cabbages and sprouts as well as vineyards, and as a defoliant in cotton.

It also can be used as a duster. The unit is self-propelled with a basic David Brown two-cylinder, air-cooled diesel tractor. The "Spray Rite" uses 1½ gal. of diesel fuel per full day's work, it is claimed. Wheel widths are adjustable by one man from 60 in. to 96 in. Check No. 6859 on the coupon and mail it to secure details.

No. 6860—Dry Bulk Transport

A new twin-screw unloading steel trailer designed to haul all types of heavier dry bulk material has been announced by the Butler Manufacturing Co. The "clean bore" interior of the trailer's 60° slope side walls is said to assure positive flow to the twin-screws and permit fast, continuous unloading without material hang-out or bridging. Twin dual pitch 9 in. diameter screws are each 28 ft. 6 in. long and have 6 in. pitch the first 20 ft. for power unloading of the trailer even with a full, tightly pack-



ed load and 9 in. pitch on the rear 8 ft. 6 in. length provides speed and assures maximum rate of delivery, it is claimed. Check No. 6860 on the coupon and mail it to secure details.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6858—Film on Plant Deficiency

The American Potash Institute announces a color film on signs of potassium deficiency in plants. The strip presents, the Institute says, typical potash deficiency symptoms in a number of field crops, vegetables, fruits, forage crops and some ornamentals. It is a single frame 35mm strip, the company says, with 22 pictures and

script featuring such hunger signs as poor growth, leaf scorch, poor root development, weak and lodged plants, poor seed and fruit quality. For information about securing films, check No. 6858 on the coupon and mail to this publication.

No. 6856—Measuring Device Data Sheet

A data sheet on the Fumiscope, a device for measuring the concentration of methyl bromide gas in a space under fumigation, has been released by the Robert K. Hassler Co. The data sheet contains information on how the instrument works, photos and illustrations of the instrument and a graph. Also included is a specification list containing size, weight range and other information. For copies, check No. 6856 on the coupon and mail to this publication.

No. 7307—Aluminum Scraper

An all-aluminum hoe which can also be used as a scraper has been introduced by the Aluminum Ladder Co. The tool can be used for removing or scraping dry chemicals, feed-stuffs and other materials from vats, tanks, barges, storage bins and other containers. The hoe is lightweight,



non-corrosive, non-splintering and non-sparking. The blade is 6 in. deep and comes in 17 to 20 in. widths. For details, check No. 7307 on the coupon and mail.

No. 7312—Drum Cover Data Sheet

Drum covers to prevent dusting and contamination during automatic weighing of chemicals, powders and other materials are described in a product data sheet (5804), offered by Richardson Scale Co. The sheet explains how the drum covers operate plus how the automatic scale units operate with the drum cover being used. Optional arrangements for increased capacity are also listed. Photos and illustrations are contained in the sheet. For copies, check No. 7312 on the coupon and mail.

No. 7314—Aluminum Bulk Trailer

A hopper bottom, aluminum dry bulk trailer, designed to haul lighter weight materials such as feed, grain and fertilizer, has been announced by Butler Manufacturing Co. The trans-



ports are available in a choice of unloading models: A center unloading gravity dump model or a swivel mounted auger model that discharges to the rear or either side of the trailer. Manholes are 30 in. by 72 in. and slide gate outlets are 24 in. by 42 in. For more complete information, check No. 7314 on the coupon and mail to this publication.

Send me information on the items marked:

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| <input type="checkbox"/> No. 6855—New Sprayer Handle | <input type="checkbox"/> No. 6860—Dry Bulk Transport |
| <input type="checkbox"/> No. 6856—Measuring Device Data Sheet | <input type="checkbox"/> No. 6861—Weed Killer Booklets |
| <input type="checkbox"/> No. 6857—Fertilizer Mixer Spreader | <input type="checkbox"/> No. 6862—Weed Control Movie |
| <input type="checkbox"/> No. 6858—Film on Plant Deficiency | <input type="checkbox"/> No. 7305—Moisture Balance |
| | <input type="checkbox"/> No. 7307—Aluminum Scraper |
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| | <input type="checkbox"/> No. 7314—Aluminum Bulk Trailer |

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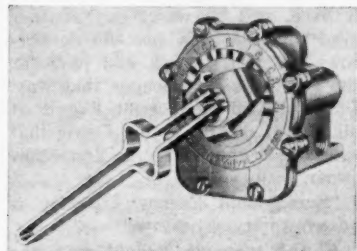
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Minneapolis 40, Minn.

No. 6855—New Sprayer Handle

Spraying Systems Co. announces a change in its overall line of TeeValves for selective spray control in boom spraying. Design of the operating control handle has been modified to provide a hand grip stop, so that position of the operator's hand will remain clear of the valve, preventing accidental chafing of the fingers, the company said. Selection of valve setting is made by rotating the control handle to any desired indexed position.



tion. For complete information, check No. 6855 on the coupon and mail to this publication.

No. 6857—Fertilizer Mixer Spreader

Simonsen Manufacturing Co. announces a fertilizer mixer spreader. The 3C Mixer Spreader has a three-



compartment box mounted on a truck, each to hold one of the basic chemicals—nitrogen, phosphate and potash nutrients. Each compartment has its own endless conveyor belt of stainless steel construction, the company says. A control gate for each compartment allows exact flow of each fertilizer component, the company says. For complete information about this product, check No. 6857 on the coupon and mail to this publication.

No. 7305—Moisture Balance

The Ohaus Moisture Determination Balance is a combination drying unit and precision balance which provides an easy way to measure moisture content of a wide variety of



products and materials, announced Seedburo Equipment Co. The unit can be used for solids or liquids and shows the percentage of moisture directly to plus or minus 0.170. The percentage of moisture loss can be read directly throughout the entire cycle as the moisture is driven off, the company says. For details, check No. 7305 and mail to this publication.

No. 6853—4-Wheel-Drive Tractor Loader

The Frank G. Hough Co. announces a rubber-tired, four-wheel-drive mod-



el "H-90 Payloader." The unit was designed to replace the company's former HO model. The unit's load carry capacity is 9,000 lb. at travel speeds. Both gas and diesel power units are offered. Buckets to handle materials of various weights are available in sizes from 1½ to 5 cu. yd., S.A.E. rated bucket sizes. A "low profile" front shroud gives the operator improved visibility, the company says. For complete information, check No. 6853 on the coupon and mail to this publication.

New Edition of Handbook Published

The new second edition of Hanna's Handbook of Agricultural Chemicals has been published. Lester W. Hanna, research entomologist, is author of the 450-page handbook. It contains descriptions of over 1,000 commercial chemicals and miscellaneous items used in the agricultural chemical industry.

Contained in its chapters are various common and chemical names and numerical designations of fertilizers, fumigants, fungicides, weed killers, insecticides, livestock chemicals, and rodenticides. Also the chemical and physical properties, formulations and uses, toxicity, and antidotes of miscellaneous materials are included.

In addition, the handbook contains USDA pesticide registrations, the trivial code of entomological terms, Food and Drug Administration residue tolerances, the Miller Amendment (Public Law 118), chemical

compatibility and weather charts, formulae, conversions and tables, and various photos and illustrations.

The author reports that the handbook is in world-wide circulation and is currently being used in 50 friendly foreign countries as well as the U.S. and territories. It is available through Croplife. Price: \$5.95.

"House Without Bounds" Opens in California

MENLO PARK, CAL.—The House Without Bounds nursery store was recently opened here by Roderick E. LaMontagne and John S. Harris.

The store offers a wide variety of packaged fertilizers, insecticides and weed killers.

The partners run a home goods store in an adjoining building under the same name, on the theory it is all part of house and garden.

SMIROW is the favorite natural organic of fertilizer manufacturers and farmers—and has been since 1921.

ONE HUNDRED PER CENT natural organic, uniform in texture and color, excellent mechanical condition, dust free—that is SMIROW tankage. There is no substitute for SMIROW's combination of benefits for fertilizer manufacturers and farmers.

Used in mixed fertilizers or applied direct, SMIROW provides sustained, even-feeding for that all-season effect on plant growth. SMIROW is not a synthetic—but 100 percent natural organic.

Put more customer benefits in your fertilizer—add to its selling power—with SMIROW tankage, the 100 percent natural organic nitrogen.

Let us figure the cost of SMIROW delivered to your plant.

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Doing Business With

Oscar & Pat



Lean, fur-capped Conrad Zachow walked slowly into the Schoenfeld & McGillicuddy Farm Supply Store and made his way to a front area island not too far from Oscar Schoenfeld's wooden railed office sanctum.

Zachow stared at a 10 in. television set which stood on a step-up display level. A crude, handmade sign said, "FOR SALE \$35. Ask Oscar."

"So this is the television set I have been hearin' about," Zachow said. "\$35! Oscar, that set is at least 9 years old. And the name—Peerless. I'll bet it ain't made any more."

"That's a goot set!" Oscar said. "Want to buy it—cash?"

Zachow laughed. "Well, I was thinking of buyin' a used one for \$10 to put in the barn. But \$35—that's way too much. And that 10 in. screen—what do you do when you watch it, use a magnifying glass?"

"Ach, it a goot set," Oscar snapped. "Buy a new one, it costs you \$150. This one is only \$35. It carries the same picture, yah?"

"But why are you selling it?"

Oscar grunted. "My wife wants a bigger one. Ach, I want to trade it in on a used 14 in. The dealer only wants to give me \$15. I say, no, I sell it myself. Andt I will. You'll see."

Zachow considered. "Oscar, I got my freezer chuck full of frozen chickens, turkeys, beef, pork and lamb. Sell that set to me for barn use for \$20 in trade for frozen meat, retail price and I'll take it—if it works."

"Sure it works," Oscar said. He got up from his chair, went to the island where the set was, and turned it on.

After a long while the picture came on, and Conrad Zachow grinned. "Gee, that's a small picture. Here I got a 21 in. in the house, and then I have to come to the barn and see this 10-incher! Well, I can always put on an extra pair of glasses, I suppose."

"The picture iss clear," Oscar said. "Much sharper than those big sets. Ach, you gif me \$35 in trade for meat—wholesale price—and I sell."

"\$35! Wholesale meat price? Why don't you ask me to throw the freezer box in, too? Oscar, you're unreasonable."

Oscar threw out both hands in a gesture of dismissal. "Ach, you don't pay the price, somebody else will."

Conrad Zachow fumed. "Golly, I'm sure gonna check the fertilizer prices: you guys charge me next spring. I feel like going elsewhere to buy. That Irish partner of yours will have to do some talking to get me back."

Oscar grumbled. "Be sure he talks cash—not credit. Ach, we got too much credit on the books now."

Zachow made his exit through the warehouse on his way to his truck. He stopped for a moment to talk to Red Corcoran, an employee. "Oscar wants a fortune for the old 10 in. TV," he said. "I wanted one for barn use, but he wants \$35."

Red Corcoran laughed. "That's quite a story, all right. Seems that Oscar's wife Minnie had red eyes, so she went to an eye doctor. The doctor finds out she has a 10 in. television set and is turnin' it on all the time daytimes when Oscar ain't home. So the doc says get a bigger television. And he phones Oscar and tells him so."

"No!"

"Sure. Oscar gets mad, bawls out Minnie and hauls the television set down here to sell. He figures he can make a trade for a used 14 in. with no outlay of extra cash."

"What a guy. Did you ever hear of anyone so tight? I'll bet he tries to buy his sauerkraut in barrels, and at a discount."

Red chuckled. "Man, he is different, but lemme tell you this: We ain't never missed a payday since I worked here. Oscar sees that the dough gets in. Now if we left it up to Pat—he'd go out selling on payday and forget to pay us until Monday—if

there was any money to pay us with."

Zachow laughed. "Yip, you often wonder why a man marries a certain woman, until you find out one always has a halter on the other. Sometimes gets tirin', but in the long run it's a good thing."

"Depends on who wears the halter," chuckled Red. He took a newspaper from the dusty shelf on the sidewalk. "Look what Pete Hamilton, the columnist for the county weekly, said about Oscar's 10 in. TV last week."

Zachow took the paper and read,

"A well heeled local business man whose wife got tired of their 10 in. Peerless television set has it on display at his store. The price is \$35, magnifying glass included."

Zachow laughed. "Did Oscar see this?"

"Sure. He says it's good advertising. May help him sell it?"

"Well, I'll be darned. And is it true that Oscar now takes his wife to church every Sunday in the firm's farm supply truck—the light job?"

"Yip. His 1938 Essex broke down about a month ago. Oscar won't have it fixed, and he won't buy another used car or a new one. So he borrows the firm's truck and pays for the gas. Says it's cheaper that way. Of course Minnie doesn't like it at all. But it doesn't bother Oscar that everyone laughs at him. You know Oscar."

"Sure," said Zachow. "Money is always in style, he says."

At this moment, Tillie Mason, the

NEW FERTILIZER DISCOVERY COSTLY RETURNS OF CAKED

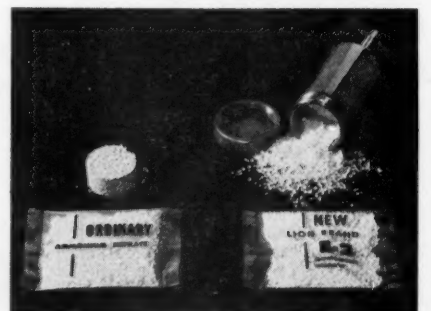
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NEW SUPER-DENSE LION E-2 GIVES YOU prills of uniform size, 50% harder for dust-free handling and no loss in ground or air application. Super-density puts 20% more material in spreader, means less handling, storage and labor.



TEST IT YOURSELF. This hand compression chamber creates pressures up to 600 lbs. per sq. inch, but it can't cake Lion E-2. Your Monsanto salesman will show you how to compare Lion E-2 with any other ammonium nitrate you carry.

plump, sweated office girl, came into the warehouse.

"Red," she said, "Oscar wants you to come in and haul the television set outside and put it in Prof. Schmelling's car."

Red gaped. "Did—did he sell it?"

"Did he? Why, when he saw that well dressed professor get out of the car, he just sensed something. He rushed over and took down that \$35 sign and stuck it behind his desk. Then when the professor asked if he still had the set and how much it was, Oscar said he had it and the price was \$80."

"Wow."

Tillie nodded. "The professor kicked on the price, said it was advertised for \$35—he saw the price in the newspaper column. That's why he came here. He's a collector of old time Peerless TV sets. They aren't made anymore."

"And Oscar got away with the \$80 price?"

Tillie nodded. "He told the professor he had upped the price only today, and he could take it or leave it."

"And the professor took it?"

"Just like that!"

"Holy cow!" said Zachow. "I'm goin' home right now and look over every darn old heirloom or relic I got in the attic. Then I'm gonna run an ad in the paper asking about \$50 for each item. There's more money in that than in farmin'."

"But you're not an Oscar," put in Red Corcoran. "You couldn't hold out for your price like he can."

Zachow sighed. "No, I guess not. Maybe I'd better sink my extra dollars into more fertilizer and try to double or triple my investment like Pat says I can. If I do I can buy a 14 in. TV for my barn, and maybe I can pick one up for \$25 somewhere else."

SHOP TALK

(Continued from page 9)

min. lunch periods. All female employees are issued three dacron uniforms. They have to furnish their own laundry, which they were pleased to do if they could get the dacron uniforms.

This over-all profit sharing plan covers all employees, full and part time; however they must be in the store's employment during the time of payment, which is annually at the Christmas dinner party. The least amount a part time employee would get is one share and he would be entitled to this even if he worked just one day.

The next phase, commission payments, is to department managers. This is precalculated on the basis of budgeted sales, budgeted labor, and budgeted C.T.O. (contribution to overhead) dollars. Each of these

three points is given a commission dollar value.

Payments are made for each inventory period in which the year to date figure for that particular factor equals or better the budget figures. This allows commissions to be prefigured to a certain extent, based on budget expectations.

The store will pay on one, two or three bases, depending on what they achieve. If, during one inventory period, they fall short of any one or all of these bases, it can be made up the next period and retroactive payment made.

The store tried to consider the peak periods or seasons of the year for sales or profits as well as any percentage of increased business anticipated. This commission amount could be \$520 or more, depending on performance by the manager in his respective department.

The store manager commission is somewhat based on the same principle as that of department managers. It is to his interest to assist in every way possible the department managers, so they achieve their requirements. The firm feels that one-half of the total amount paid to the department managers in his store is a fair commission for the store manager.

The store has a profit sharing trust plan whereby it can invest up to 15% of wages, depending on profits of the firm. In this plan are just the supervisors and top key personnel. Here is where the manager comes in, because he carries a key as well. The store uses as a basis the total wages paid to these individuals, including their commissions or profit sharing heretofore mentioned. The store is able to add 15% to this amount, which is not taxable to the employee and is deductible by the corporations. The employee pays only on capital gains at such time as he withdraws it. This amount is retained in the fund supervised by trustees. An employee must be with the organization at least three years before he is eligible for this trust fund and must be a store manager or supervisor.

Good Employee Quality Aids Dealer's Business

Farm store employee qualities were outlined recently by James H. Burrell, business management consultant, St. Louis. Said Mr. Burrell:

"A sensible, successful employer wants and must have certain employee qualities if he will remain in a prosperous position. He wants and he must have people who possess: (1) ability to put through a job thoroughly; (2) ability to find a better way to do a job; (3) ability to see new work and do it; (4) ability to work with people; (5) ability for acquiring vision, and capacity of knowing more and more about the department and business with which they are connected; (6) ability to keep growing; (7) the courage of convictions; (8) loyalty, the greatest virtue of the world on which all other virtues are based; (9) honesty, purpose, ambition within reasonable limits, cleanliness of character and a fine regard for human beings and human rights.

"All of these and many others are required to make up character in an individual."

SOUTH CAROLINA SALES

CLEMSON, S.C. — Fertilizer sales during December, 1958 in South Carolina amounted to 18,332 tons or 1938 tons less than in December, 1957, reported B. D. Cloaninger, director of the department of fertilizer inspection and analysis, the Clemson Agricultural College.

ENDS COMPLAINTS AND AMMONIUM NITRATE!



THE WETTEST PLACE... NO CAKING!
Mobile, Ala. 67.57 in. rainfall per year.



THE COLDEST PLACE... NO CAKING!
Bismarck, N. D. Average low temp.: -44°F.



NEW MOISTUREPROOF BAG of tough polyethylene keeps fertilizer dry and free-flowing until used. Re-usable bags have dozens of uses, help increase your volume on New Lion E-2. Also available in new polyethylene-lined multiwall bags.

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Wisconsin Agronomist Urges Improved Farm Soil and Management Practices

MADISON, WIS. — Corn profits were boosted \$45.50 an acre when improved soil and management practices were used in a demonstration of cost-cutting and income-building farming operations, reports Prof. C. J. Chapman, University of Wisconsin extension soils specialist.

Corn profits were boosted \$45.50 an acre when improved soil and management practices were used in a demonstration of cost-cutting and income-building farming operations, reports Prof. C. J. Chapman, University of Wisconsin extension soils specialist.

In the demonstration on the R. L. Pavlak farm near Deerfield, Wis., net profits from corn averaged \$77 an acre, on a field with improved practices, compared to \$31.50 where conventional methods were followed, says Mr. Chapman. His statement is summarized here by the Midwest division of the National Plant Food Institute.

The principal factors in the program of improved practices were heavy applications of fertilizer, minimum tillage and the use of Simazin, a new type spray for weeds. Careful records were kept of all cost and yield information.

Corn yields averaged 140 bu. an acre on the improved field, compared to 75 bu. on the conventionally-managed field. Corn growing costs, re-

spectively, were 62¢ and 75¢ a bushel.

The fertilization program on the improved field included 800 lb. of plant food, per acre, made up of 500 lb. of pre-plant plow-down fertilizer and 300 lb. of starter. The conventionally-farmed field received 200 lb. of starter fertilizer alone per acre.

Total labor and machinery costs averaged \$13.50 an acre on the improved field, compared to \$19.25 on the conventionally-farmed field. This saving was made possible by combining plowing and dragging and eliminating disking and cultivating on the improved field.

Profits per acre were more than doubled on less than double the yield per acre in this demonstration, Mr. Chapman points out.

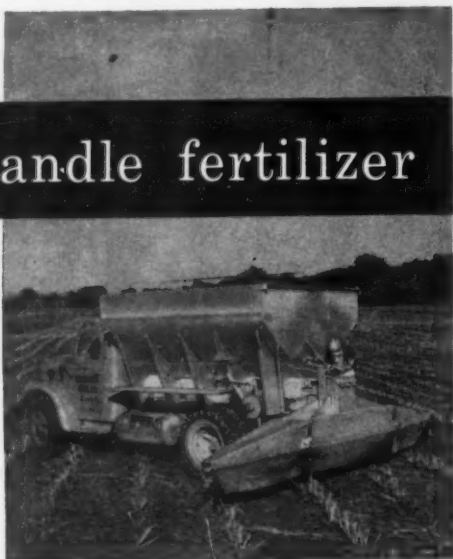
"The \$77 an acre does not represent the total profit on the improved field," Mr. Chapman says, "for there was a definite build-up of soil value from increased use of fertilizer. The corn plants did not remove all of the nutrients from the soil. Hence there was a carryover of fertility for the immediate years ahead."

"This demonstration clearly indicates that when costs of production per unit go down, profits go up per acre, per bushel and per hour of work. The demonstration showed, also, the importance of keeping careful records, particularly on profits and costs of production."

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FERTILIZER *Mixer* SPREADER



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can apply a large variety of plant food ratios.

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What's Been Happening?

This column, a review of news reported in Crophlife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Grasshoppers are likely to be more widespread, but less of a threat to western crop and rangelands in 1959, the U.S. Department of Agriculture announced with the release of figures showing the results of federal-state surveys made last fall.

Negotiations were completed Jan. 15 for the purchase of Deep-Root Fertilizers, Inc., Olathe, Kansas, by the American Agricultural Chemical Co. The announcement was made in New York by C. M. Powell, president of the AAC company.

Construction of a \$500,000 addition to its fertilizer plant in Fort Pierce, Fla., was announced by W. R. Grace & Co. Chemical Division.

General Fertilizer Corp. has filed a charter of incorporation with the corporation department of the secretary of state's office in Dover, Del. Authorized capital stock of the firm is \$10,000.

"We must keep in step with the farmers in helping them solve their problems and supply their needs," Dr. D. E. Wolf, the Du Pont Co., Atlanta, Ga., told more than 175 persons attending the Pesticide School at North Carolina State College in Raleigh recently.

Construction of SunOlin Chemical Co.'s \$11 million urea plant at north Claymont, Del., is scheduled to start in March, 1959, and should go into operation by the end of the year, announced James I. Harper, SunOlin president. The 13½-acre site is adjacent to Sun Oil Co.'s refinery at Marcus Hook, Pa. Employment opportunities will be provided for about 40 persons.

The Alabama Soil Fertility Society, Inc., held its fourth annual meeting in Montgomery, Ala., and reelected Frank E. Boyd, southern agronomist for the Virginia-Carolina Chemical Corp., as president.

Mississippi Chemical Corp., Yazoo City, Miss., has announced plans for the construction of a \$1.5 million urea plant at Yazoo City, said Owen Cooper, executive vice president. The plant will produce about 100 tons of urea a day.

U.S. Department of Agriculture scientists at Beltsville, Md., gave their blessing to a suggestion from Crophlife that the heavy yields of crops in 1958 placed a heavy drain on basic plant food nutrients and that for the coming crop year prudent producers should reexamine their soil conditions, and prepare to reflect the drains on their soils with replacement values of plant food, reported John Cipperly, Crophlife's Washington correspondent.

Consumption of fertilizers in the U.S. and territories of Hawaii and Puerto Rico during the year ending June 30 totaled 22,358,000 tons, a drop of 351,000 tons or 1.5% from that used in the preceding year, according to a preliminary report released by the U.S. Department of Agriculture.

Central Farmers Fertilizer Co. of Chicago shipped the first carload of rock phosphate from its Idaho phosphate works Dec. 19, according to announcement by Joseph L. Lanter, president of the company. The car was consigned to the Farmers Chemical Co., Joplin, Mo.

North Dakota Nitrogen, Inc., Bismarck, N.D., has been given approval to purchase government lignite piles at Garrison, N.D., according to Lynn W. Pine, Garrison district engineer.

American farmers have produced in 1958 an all-time record output of crops from the smallest planted acreage in 40 years, reported the U.S. Department of Agriculture in its annual crop summary.

Although production continues to exceed consumption, the situation in the world nitrogen market is not so pessimistic as statistics might indicate, was the opinion of Aikman, Ltd., London broker, in its annual year-end report on the nitrogen industry.

Present indications are that farmers will use more plant food in 1959 than at any time in the country's history, said Dr. Russell Coleman, executive vice president of the National Plant Food Institute. A combination of circumstances, Dr. Coleman said, is responsible for the optimism now prevalent in the fertilizer industry.

The U.S. Department of Agriculture felt that a possible slackening of farm income in 1959 could be seen by economists of the Agricultural Marketing Service, despite 1958's prices and farm income which averaged the best in five years. The economists felt that prospects are for continued heavy supplies of farm products generally, with wheat and feed grain supplies especially burdensome.

Bunker Hill Co. announced the acquisition of a phosphate property near Elliston, Mont., that could be used to supply its proposed \$10 million treble superphosphate fertilizer plant, which is scheduled to be built at Kennewick, Wash.

Many factors may be responsible for failure to obtain cotton insect control, and all should be considered before placing the blame on any one specific cause, according to the Beltwide Cotton Production Conference Report on Cotton Insect Research and Control, released at the conference in Houston, Texas.

How to grow cotton for profits and markets was spelled out by cotton research workers to some 800 cotton industry leaders at the annual Beltwide Cotton Production Conference held in Houston Dec. 17-18.

Russia has the land, water, know-how and the people to do the job of increasing its production of cotton a considerable amount in the next 10 years, according to Dr. Billy M. Waddle, supervisory research agronomist with the U.S. Department of Agriculture, Beltsville, Md.

While the pesticide industry agrees that the Miller Amendment is a "good sound law," it believes that there can be developed some simplified procedures for determining toxicity and for registration of products for use in agriculture, J. V. Vernon, president of the National Agricultural Chemicals Assn., declared at a recent conference in Washington.



FARM SERVICE DATA

Extension Station Reports

The use of limestone, when needed, boosts corn yields, says Alva Preston, University of Missouri extension soils specialist. Lime increased corn yields from five to 20 or more bushels an acre during the 1958 growing season.

Mr. Preston says these figures are based on yield reports from county agents in all parts of the state and from University research plots in Columbia.

In most sections of the state, adding lime on unfertilized corn land increased yields 5 to 8 bu. an acre over the customary average yield of 30 to 40 bu. On corn fertilized for a high yield and producing over 60 bu. an acre, limestone added 15 to 20 bu. an acre in yield.

In these fields, limestone often made the difference between a good yield and a bumper crop.

Mr. Preston says the increased yields are largely due to the effect lime has on nitrogen.

Corn requires large amounts of nitrogen to make top yields. The only place for the crop to get its nitrogen is from soil organic matter and fertilizers. However, nitrogen in these materials must be worked over by soil micro-organisms, or "tiny bugs," and changed to a form of nitrogen the corn plant can use. These "tiny bugs" must have lots of calcium to get their job done.

Thus, a soil low in calcium, or needing lime, is usually short on "bugs" or micro-organisms. This may mean nitrogen shortages even though the crop has been well fertilized.

This, and the favorable effect lime has on available phosphate, is responsible for 1958 yield difference between limed and unlimed corn land, Mr. Preston says.

★

What is the most profitable rate of applying fertilizer? Since response of crops to fertilizers varies with the soil, season, and other environmental factors, the answer is not an easy one. But in an effort to determine principles to follow, two Kansas State College investigators, Frank Orazem and Floyd W. Smith, recently completed an extensive study of use of fertilizer on 1956 corn grown on Verdigris soil in eastern Kansas.

While their findings, published in an agricultural experiment station technical bulletin, "An Economic Approach to the Use of Fertilizer," are applicable only to the limited conditions of this one experiment, the principles they evolve should prove a useful guide to anyone dealing with fertilizers. Mr. Orazem, an agricultural economist, and Mr. Smith, a soil scientist, plan additional studies to give aid in deciding on profitable use of fertilizer.

The two men point out that for a farmer, or anyone, to make an intelligent decision, he needs to know what return he can expect from, say, an additional 10 lb. of nitrogen to the acre. And while a farmer with unlimited capital might continue adding nitrogen until the cost of additional nitrogen exactly equaled the expected additional return, another farmer, with more limited resources, would stop far short of this point. He could use the funds at his disposal more profitably in other ways.

The investigators point out how detailed information on crop response to fertilizer would encourage greater

investment in fertilizers even on farms with limited capital.

"This type of information also should aid lending agencies to extend credit more freely for fertilizer purchases," they comment.

★

Heavily fertilized continuous corn on the same field can help farmers carry more livestock than their land can now feed from crop rotations that include several years of legumes.

Another advantage is that the high

yields can produce enough corn stalks to supply the soil with about as much organic matter as legumes will provide, according to Dr. W. P. Martin, head of the University of Minnesota soils department.

"Corn yields as high as 133 bu. per acre have been grown on research plots cropped to continuous corn since 1953," says Dr. Martin in a statement to the Midwest division of the National Plant Food Institute.

Dr. Martin says continuous corn should be limited to low, level fields where there is little erosion danger.

He lists these requisites for continuous corn in Minnesota:

- Use up to 800 lb. of complete fertilizer per acre plowed down in the spring, plus a 200-lb. starter application at planting time, and sidedressing in the weeks that follow.

- Put in a high corn plant popula-

CROPLIFE, Feb. 2, 1959—15
tion, ranging from 18,000 to 20,000 plants per acre.

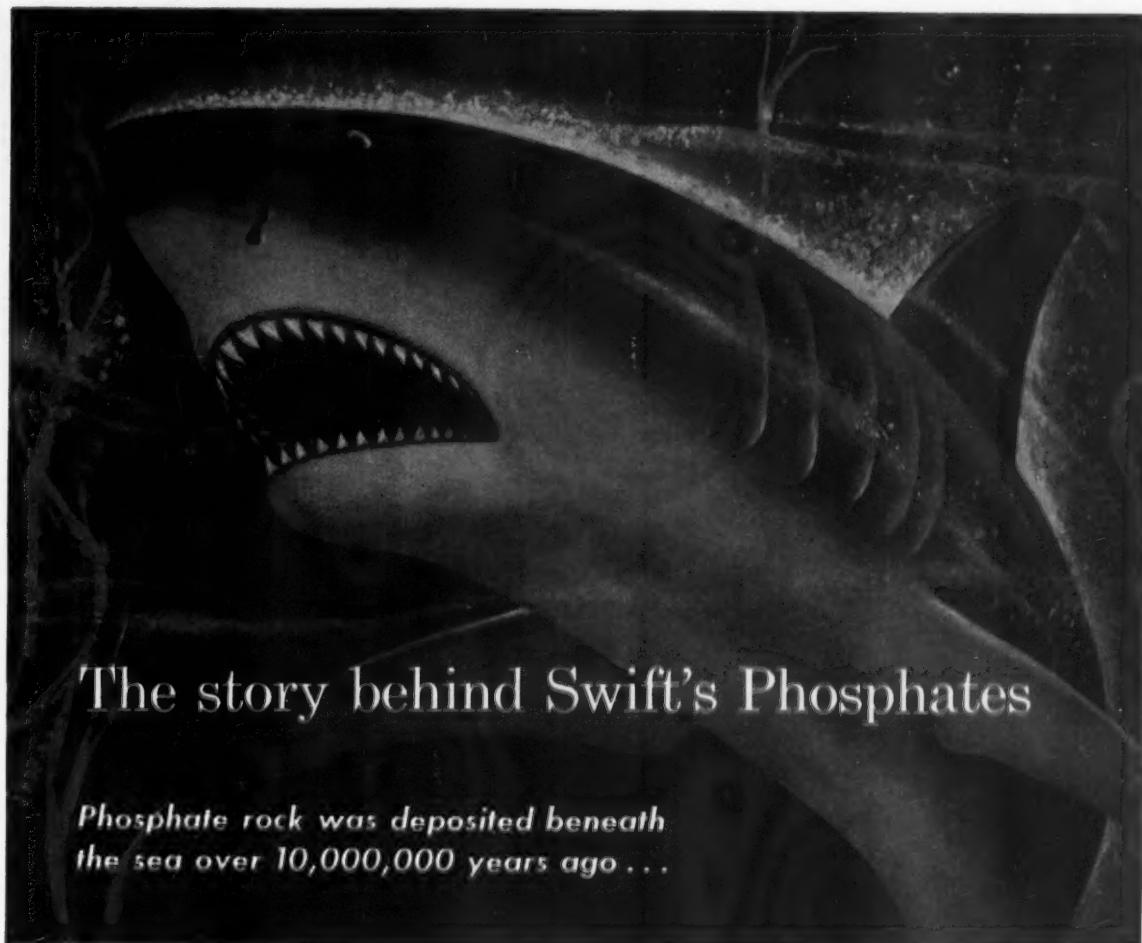
- Use chemical weed control and also soil insecticides to prevent an insect buildup.

- Use minimum tillage and careful cultivation to protect soil structure.

Dr. Martin says that on rolling land, crop rotations with several years of forage crops are still best. But on level fields, a farmer can profitably fit continuous corn into his over-all farming plan.

OREGON POTATOES

SALEM, ORE.—About one third of Oregon's potato crop went into the government's 1958 diversion program, the state department of agriculture reported. A total of 64% of the potatoes submitted for diversion were accepted according to W. L. Close, federal-state supervisor of shipping point inspection.



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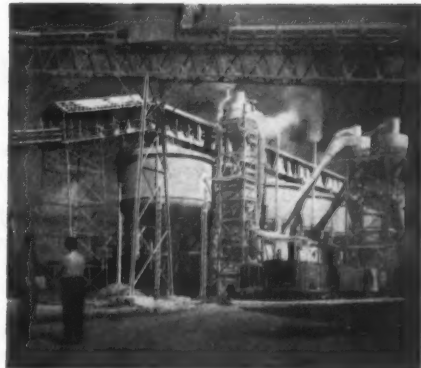
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Fossilized remains of giant prehistoric sharks in Swift's Florida phosphate rock deposits tell us these beds were formed at the bottom of a sea 10 to 15 million years ago.

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DISPLAYS

(Continued from page 9)

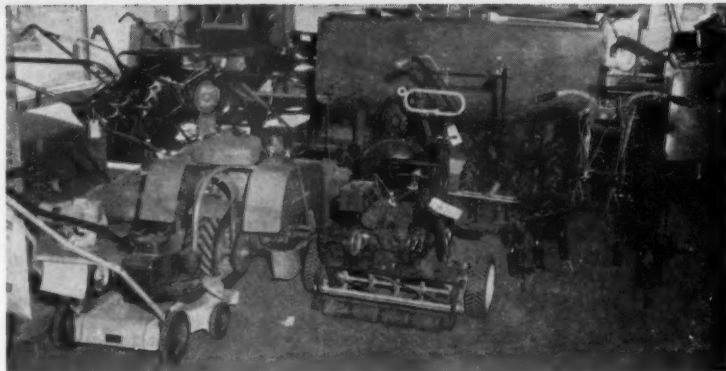
garden tractors and power mowers. Of course, with a regular farm implement service crew of three men, he has no trouble handling repairs on small items, too. Often, seasonally, the service of garden tractors and power mowers keeps several of the service men busy, and these are often periods when farm implement work is slow.

Mr. Landis says his firm sells 20-30 Planet Jr. garden tractors annually and about 50 power mowers. Sales of garden tractors have gone higher in some years.

"We have several hundred garden tractors in service in this area, and many owners bring them in for service and checkups at least once a year," says Mr. Landis. "This provides work and revenue for us. And those owners often buy other farm

and garden supplies when they bring their machines in or come to call for them."

"By having an attractive farm supply store, we boost our store traffic," states Mr. Landis. "That is important, not only for the sale of related line merchandise but also for a big line such as farm implements. In my opinion a good farm supply store can be the backbone of a business. It can be the one department which helps to bulk up the weak months of a major line such as farm implements, feed and even fertilizer. The modern farmer today has a big purchasing power compared to the dealer of twenty years ago. Why shouldn't our store be almost a one stop store for him for many



GARDEN TRACTORS, mowers and milk tanks take up a lot of display space, but E. K. Landis, owner of Landis Bros. in Lancaster, Pa., says they make up for it in increased sales.

of his needs? That is what we are working for."

The Landis organization has several buildings, all located in one area.

Farm machinery and fertilizer are stored in several of them. The firm also has a large service shop area in back. Here farmers and garden tractor owners can drive up with their machinery for easy unloading.

With a variety of services for the farmers and with a fine farm supply store to boost traffic and sales, Mr. Landis thinks he has a good combination with which to face the future.



Footwear courtesy of Abercrombie & Fitch Company

One pair fits exactly

Just as one kind of footwear fits a special purpose, Sinclair can fit your needs for nitrogen products—exactly!

Before you buy, check these points: Does your present supplier offer top quality nitrogen products? Are they readily available even during peak seasons? Moreover, can you get prompt, reliable, low-cost delivery?

Sinclair is in a position to fill all your requirements—exactly. We can speed top quality nitrogen products to you from Hammond, Indiana—the center of the Midwest's transportation system.

Vast storage facilities for anhydrous ammonia and nitrogen solutions assure delivery where and when you need it. To solve your supply problem, make Sinclair your source!

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Gloomicides

"You said the colors in this bathing suit were fast," stormed the angry lady to the department store salesman. "Why, they've run all over my back. As soon as I went into the water, they came out!"

"Those are fast colors, madam," the salesman insisted. "You'll see, when you try getting them off your back."

★

A high school boy, on a trip to Washington with his graduating class, tried to mail a letter in a fire-alarm box. When the firemen arrived, sirens wailing, he was still standing on the corner, holding the letter. After a lecture, firemen mailed the letter for him.

"Wow!" the boy later exclaimed to his pals, "does this city ever have a cra-a-zy postal service!"

★

"Hi, sweetheart," said the smart aleck to the waitress as he entered the restaurant. "Where have you been all my life?"

The blonde sized him up coldly for a moment, then replied crisply, "Out of it, thank goodness!"

★

What a shame our teen-agers have to go overboard for this rock-and-roll nonsense—instead of turning to something sedate and dignified like the Charleston or the Bunny Hug.

★

Every restaurant proprietor is familiar with the patrons who sometimes ask that the beefsteak leavings be put in a bag "for the dog."

Word reaches us that when it happened on a recent occasion, the small boy in the family spoke up in a shrill and excited voice: "Oh, boy, we gonna get a dog?"

★

"This is the very last word, madam," the salesman assured the woman shopper as he held up a royal blue Italian silk smoking-jacket. "Just the thing for the man-about-town."

"It certainly is," the lady agreed. "But what do you have for the mouse-around-the-house?"

★

People who address you as "buddy," "chum," "my friend," "pal," "you old rascal, you" are not being overly friendly. They have merely forgotten your name.

PESTICIDE STOCKS

(Continued from page 1)

chemical industry, and the introduction of new products.

In short, this means that in instances where there appears to be an accumulation of inventory of certain pesticidal chemicals, it may reflect either the building up of products which are now on the decline in the farm industry, or where new or potentially effective products are being purposely over-produced by manufacturers who wish to test markets.

Running down the line of the USDA report, the aldrin and heptachlor type products appear to have reached a point of stabilization wherein keen competition and utility have enforced a sharp influence on sales of these products.

The 2,4-D chemicals seems to have found a pattern of production which swells and ebbs year after year and this official report now finds this class of chemicals on the high inventory side.

Dealers may find profit in considering the official opinions of USDA in the pesticidal chemical field, particularly in connection with phosphorus compounds of methyl parathion and parathion. Both of these products show a heavy inventory buildup.

For the first-named compounds, USDA officials report that new products constitute the heavy inventory. This represents the initiative of the basic product manufacturer to introduce new products—those designed for specific crop purposes.

The sensitive category above mentioned is for methyl parathion where new products are reaching into new areas of sale.

Again this same type of sales promotion is evident in the weed killer field. New materials—designed to attain utility for specific crops—are being developed.

All of this means that dealers must look at new products on utility—on volume of purchases and on storage availability—in connection with the crops in their sales area.

USDA officials tell Croplife that a new compound—for example a weed killer—may display great utility for some crops, so it must be appraised in regard to the crops produced in areas where the dealer does his business.

The official report shows that miticide inventory has increased 143% in 1958 over the previous year.

Such a disturbing statistic is meaningless, says USDA, since the miticide industry is exploring new uses—new possibilities—and in the course of exploration it is not uncommon that there may be many materials examined which miss the sales target.

In the fungicide field, the same common denominator exists. Copper materials are losing ground as seen in the report. This means that copper materials may be exhibiting loss of utility for new products. USDA officials speculate on the opinion that fungicides are switching to organic chemicals rather than copper based products.

New herbicidal materials are appearing every crop year. These new materials are designed to protect specific crops. They are not interchangeable between crops. This means that dealers or formulators in the herbicide field will have to tailor their sales techniques to crops in their immediate farm areas.

All these weed killers appear to have major utility, but they must be custom-made.

From information obtained last week by Croplife, there is little doubt that the pesticidal chemical industry is on the horizon of vast expansion but the important problem is one of

distribution. Formulators and consumers of the materials need further education as to the uses of these new products being developed by the major chemical companies.

The over-all common denominator of the pesticidal chemical industry's utility for the agricultural economy lies in its making available to all farmers a cost reducing factor, which will make for a better net farm income.

A prudent farmer may assess the USDA report in connection with the pesticidal chemical inventory report—and make up his own mind where agriculture is going—the same way that most farmers measure the ratio between feed grains and the animals they raise, as compared with the cost of the feed grains they grow on their farms.

Chemical Manufacturers' Primary Pesticide Stocks

1958 stocks as a percentage of 1957 stocks

Material	
Aldrin, chlordane, dieldrin, endrin, heptachlor, toxaphene	96
Benzene hexachloride (gross basis)	81
10-15 percent gamma grades	79
36 percent and above, including lindane	87
Calcium arsenate	152
Copper fungicides	133
2,4-D (acid basis, but includes manufacturers' formulations)	144
DDT	43
Fumigants (grain and soil)	54
Lead arsenate	102
Miticides (miscellaneous)	143
Organic phosphorus compounds	177
Includes:	
Methyl parathion	742
Parathion	115
Others	133
2,4,5-T	106
Fungicides (miscellaneous)	80
Insecticides (miscellaneous)	121
Weed killers (miscellaneous organic)	256
All primary stocks	89



To Mr. James Judah of Columbia, Missouri

"Mathieson means more profitable farming"

Mr. Judah's yearly harvests average: 60 bushels of wheat . . . 95 bushels of corn . . . 120 bushels of milo. He farms over 400 acres, double cropping much of his land—corn and milo after barley and oats silage. His basic program—160 acres watered with a Mathieson portable irrigation system . . . high-analysis AMMO-PHOS fertilizers . . . Mathieson pesticides.

Mr. Judah used to be a fertilizer dealer before he became a full-time farmer. "I still have something of a competitor's respect for Mathieson products," he says. "Mathieson quality is the important factor,

and the men behind the products mean a lot too. My Mathieson dealer is well informed and helpful. The Mathieson field representative and agronomist here are always ready with sound professional help on technical problems."

It's the same everywhere, from the tobacco lands of the Carolinas to the truck farms of California's Imperial Valley . . . from the Dakota's Red River to the Rio Grande . . . for thousands of the nation's progressive farmers as well as Mr. Judah—Mathieson truly means more profitable farming.

AMMO-PHOS® is a trademark

Mathieson—AMMO-PHOS Fertilizers . . . Anhydrous Ammonia . . . Irrigation Systems . . . Pesticides



OLIN MATHIESON CHEMICAL CORPORATION

PLANT FOOD DIVISION • LITTLE ROCK, ARKANSAS



Charles L. Fetzner C. L. Barber Robert L. Olcott Alwin C. Sherman R. R. Wangerin J. M. Magner Dr. E. C. Spurrier

Monsanto Increases Agricultural Chemicals Sales Staff by 100%

ST. LOUIS — Monsanto Chemical Co.'s organic chemicals division is increasing the size of its agricultural chemicals sales staff by more than 100% for "more intensive coverage of its national distribution of these products," it was announced here.

The expanded sales force, which became effective Jan. 15, will market the division's technical grade agricultural chemicals to formulators as well as the Monsanto-brand packaged herbicides and insecticides. The former group of products previously was sold by the division's regular field sales force.

According to James W. Starrett, Jr., manager of agricultural chemicals sales for the organic division, the number of technical sales specialists in the department will be increased to four men who will provide technical service and assistance to customers throughout the U.S.

The division has established five new sales areas. They include the western area with headquarters at San Francisco; the south central area with headquarters at Luling, La.; the north central area with headquarters at Des Moines, Iowa; the southeast area with headquarters at Orlando, Fla., and the northeast area. Head-

quarters for the latter area will be in the vicinity of New York City, Mr. Starrett said.

Charles P. Zorsch of St. Louis, manager of farm chemicals sales, has been named to the newly created position of merchandising manager for agricultural chemicals. He will continue to assist in the direction of the merchandising activities of the field sales staff in the five areas.

Charles L. Fetzner, former district sales manager for the organic division at San Francisco, was named western district manager. His territory will cover Washington, Oregon, California, Nevada, Idaho, Wyoming, Utah, Arizona, western Montana and western Colorado.

Dan W. Ragsdale, El Centro, Cal., will serve south California and Arizona in the western district, reporting to Mr. Fetzner. John G. Neckerman will cover the northwest portion of the district and will be based at Seattle, Wash.

Claiborne L. Barber of St. Louis was appointed south central area supervisor. His district includes Mississippi, Alabama, Louisiana, Texas, Arkansas, Tennessee, New Mexico, Oklahoma and southern Missouri. Herbert C. Ploch of St. Louis will cover the northern portion of this area and will be based in Memphis, Tenn. An additional sales represen-

tative will serve the Texas Rio Grande Valley in that district.

Robert L. Olcott of Des Moines, Iowa, was appointed area supervisor of the north central area. Reporting to him will be Donald D. Reichert at Minneapolis, Jack G. Rotramel at Columbus, Ohio, and an additional salesman who will be based near Bloomington, Ill. The north central area will cover North Dakota, South Dakota, Minnesota, Wisconsin, Nebraska, Kansas, Iowa, Illinois, Indiana, Michigan, Ohio, Kentucky, West Virginia, eastern Montana, eastern Colorado and northern Missouri.

Alwin C. Sherman of St. Louis was named southeast area supervisor. The territory will encompass Georgia, Florida, Virginia, South Carolina and North Carolina. A sales representative who will be designated later will be based at Raleigh, N.C.

The sales of agricultural chemicals in the northeast will continue to be the responsibility of Charles A. Leonard of Harrisburg, Pa., who will be based eventually closer to New York City.

Three sales specialists also were named to the enlarged agricultural chemicals sales department. They include R. R. Wangerin, J. M. Magner and Dr. Earl C. Spurrier. They will operate from the division's St. Louis office.

V. S. Searcy Named To Head Southern Weed Conference

SHREVEPORT, LA. — More than 300 delegates to the 12th annual meeting of the Southern Weed Conference elected V. S. Searcy, Alabama Polytechnic Institute, Auburn, as their president for 1959.

Other officers elected are R. A. Darrow, U.S. Department of Agriculture, Texas Agricultural Experiment Station, College Station, Texas, vice president; W. K. Porter, Jr., Louisiana State University, Baton Rouge, secretary-treasurer, and R. E. Frans, University of Arkansas, Fayetteville, secretary-treasurer-elect.

Elected as members at large to the conference's executive committee were H. E. Rea, Texas Agricultural Experiment Station, College Station; E. O. Burt, University of Florida, Gainesville, and R. P. Upchurch, North Carolina State College, Raleigh.

More than 70 papers relating to research in the field of weed control were read at the conference. Research scientists from USDA land-grant colleges, extension workers, representatives of the agricultural chemicals and equipment industries and representatives of other related groups with an interest in the control of weeds in southern agriculture attended the three day conference.

Mr. Searcy announced that the next meeting of the conference will be held at the Buena Vista Hotel, Biloxi, Miss., Jan. 20-22, 1960.

Salesmen's Association Elects New Officers

NEW YORK — James E. Spencer of the Harshaw Chemical Co. was elected and inducted into office as president of the Salesmen's Association of the American Chemical Industry, Inc., at the annual induction luncheon at the Hotel Commodore here.

Other officers elected for 1959 are: Vice president, George W. Poland, Jr., of E. M. Sergeant Pulp & Chemical Co.; treasurer, Preston F. Tinsley, Westvaco Chlor-Alkali Division, Food Machinery & Chemical Corp.; secretary, Stewart Cowell, J. T. Baker Chemical Co.

In addition, the following were elected as replacements on the board of directors: James M. Ferguson, Sumner Chemical Co.; John M. Glaze, Hooker Electrochemical Co.; Paul E. McCoy, American Potash & Chemical Corp.; Frank Reynolds, Publicker Industries; William Wishnick, Witco Chemical Co.; Walter H. Farley, Chas. L. Huisking & Co.

Retiring as directors are: Stewart Cowell, J. T. Baker Chemical Co.; Frederick A. Koch, Dow Chemical Co.; LeRoy P. London, DuPont Co.; Jerome F. McGinty, Millmaster Chemical Co.; John Seidler, Whittaker, Clark & Daniels, Inc.

Eastern States Appoints J. R. Caudle Sales Head

HOUSTON, TEXAS — R. N. Blaize, president of Eastern States Petroleum & Chemical Corp. here, has announced the appointment of J. R. Caudle as senior vice president of all sales. This office is a new position in the company and in addition to managing the petroleum and chemical sales departments, Mr. Caudle will have under his direction the traffic and the marketing departments.

Mr. Caudle was first associated with Eastern States as sales manager in May, 1954. He was elevated to the position of vice president of chemical sales in January, 1958. His new duties will begin immediately.

AGENCY ESTABLISHED

FRESNO, CAL. — Richard Lewis has established an agency at 410 Abby St., Fresno, for the purpose of distributing agricultural chemicals and related industrial products.

Indiana Farmer Wins Second Corn Contest

LAFAYETTE, IND. — For the second straight year, Frank E. Blacker, Romney, Ind. farmer, has been declared winner of the Indiana contour five-acre corn contest.

The contest is sponsored by the Purdue University extension service and the Indiana Crop Improvement Assn.

Mr. Blacker harvested 202 bu. of corn an acre on his five-acre plot, much of which had a slope of more than 2%, according to R. O. Cole, specialist in soil conservation at Purdue. Mr. Blacker won the contour state championship in 1957 with a yield of 184 bu. an acre.

To be eligible growers were required to meet all standards of the five acre corn growing contest and must have planted their corn on land with a slope of 2% or more. The corn had to be planted and cultivated on the contour.

Mr. Blacker's high yielding corn was planted at the rate of 1/2 bu. of seed to each acre in a 20-acre field where he had pastured 1,000 lambs in 1957.

The soil had been tested and Purdue recommendations were followed on fertilization. Mr. Blacker plowed down 300 lb. of 12-12-12 fertilizer an acre last spring, and then applied 150 lb. an acre of 12-12-12 in the rows. He also made an anhydrous ammonia application of 80 lb. an acre before the corn emerged.

ACQUIRES SEED FIRM

DAVENPORT, WASH. — August Reinhold has resumed ownership and management of the retail business of the Davenport Seed Co. here. The Albert Dickinson Co. of Moses Lake had operated the concern for the past year. Glenn Howell, who was Davenport manager for the firm, has returned to Moses Lake.

GRAIN SORGHUM CHAMP

DALHART, TEXAS — C. J. Roberts, a local farmer, came out far ahead of other contestants in the second statewide grain sorghum growing contest. In the irrigation division, his yield was 8,461 lb. an acre. Second place winner in the same division was Jim Shearhart of Hereford with a yield of 7,477 lb. Both towns are in the Texas Panhandle, where thousands of irrigation wells are used. In the eastern dryland division, top winner was Henry Mullis of Hill County, who harvested 6,448 lb. per acre. Despite the variance in locality and weather conditions, all winners planted the same variety of grain sorghum, RS-610, which has become one of the most popular hybrids developed by the Texas experiment stations.

Heads New Sales Office

TWIN FALLS, IDAHO — Marlowe Wood has been transferred from the Wilson & George Meyer & Co. Denver office to head the firm's new sales office here which will serve Midland Empire area farmers with agricultural chemicals.

Mr. Wood, who joined the firm in 1954, is a Utah State College graduate. James Burley, a University of California grad, will join the firm's Salt Lake City sales staff. He has been active in agricultural sales work since his 1955 graduation.

PRUNE DAY

SACRAMENTO — Stanley F. Bailey, entomologist on the Davis campus of the University of California, will discuss control of worms and scales infesting prunes during the Prune Day program at Davis Feb. 7. Also on the program are Harley English and Joseph Ogawa, Davis plant pathologists, whose topic is brown rot and bacterial canker in prunes.

New Mexico's Cotton Acreage Due to Increase

LAS CRUCES, N.M. — Cotton acreage in New Mexico will increase 17% this year over 1958's acreage, predicted the New Mexico Farm Bureau.

A survey of managers of agricultural stabilization offices in the state's four big cotton-growing counties, conducted by the bureau's New Mexico Farm and Ranch Magazine, showed that about 45% of the present allotted acreage of upland cotton in the four counties would go under Plan B, that is, the federal plan that involves more acreage and lower price supports.

This would mean an expansion from 122,000 acres to 146,000 acres in those four counties alone. Projected statewide, this would mean an increase from 171,380 to 205,656 acres or about 17% more than in 1958.

Cotton farms are prime users of fertilizers and insecticides in New Mexico and the increased acreage is expected to bring increased sales of farm chemicals.

Oregon Grass Seed Output Drops But Crop Value Up

PORTLAND, ORE. — Although production of 16 major Oregon grass and legume seeds during 1958 decreased some 21% from the previous year, value of the crop increased some 8% because of higher prices, according to the Oregon U.S. Department of Agriculture's reporting service.

Grass and legume seed output, estimated at 145,000,000 lb., was valued at \$18,301,000 based on producer prices received to Dec. 1.

Alfalfa, crimson clover, red fescue and white clover production was above the previous year while the remaining seeds were below that of 1957.

Industry Patents and Trademarks

2,868,758

Method of Improving Soil. Patent issued Jan. 13, 1959, to Edgar B. Baker, Richmond, Cal., assignor to Stauffer Chemical Co. The method of improving soil comprising adding to the soil a treating agent consisting essentially of from about 10 to about 95% by weight of a compound selected from the group consisting of the sulfate, nitrate and chloride salts of aluminum and iron, the balance of said composition being an organic soil stabilizing compound selected from the group consisting of a vinyl acetate-maleic acid copolymer having a molecular weight of at least 5,000; hydrolized polyacrylonitrile; carboxymethyl cellulose; lignin sulfonates; carboxymethylated pine sawdust; carboxymethylated redwood sawdust and ground redwood bark from which the phenolic materials have been extracted.

2,869,996

Liquid Fertilizer. Patent issued Jan. 20, 1959, to Donald E. Vierling, Pittsburgh, Pa. A substantially complete aqueous solution for assisting plant growth consisting essentially of the acid H_2PO_4 ; the bases KOH and NH_4OH ; the salts K_2HPO_4 , K_3PO_4 , $(NH_4)_2HPO_4$, $NH_4H_2PO_4$, KH_2PO_4 , $(NH_4)_2P_2O_7$ and KNH_4HPO_4 ; and the organic chemical $CO(NH_2)_2$; said acid, bases, salts and organic chemical being present in amounts corresponding to the equilibrium ratio as established by the nitrogen, phosphorus pentoxide and potassium oxide content, whereby the resultant solution contains the ions H^+ , PO_4^{3-} , K^+ , OH^- and NH_4^+ in equilibrium with said acid, bases, salts and organic chemical at a selected temperature and pressure, the nitrogen (N), phosphorous pentoxide (P_2O_5) and potassium oxide (K_2O) each being present in amounts ranging between approximately 1% and approximately 45% by weight.

2,869,998

Liquid Fertilizer. Patent issued Jan. 20, 1959, to Donald E. Vierling, Pittsburgh, Pa. A substantially complete aqueous solution for assisting plant growth consisting essentially of the acids H_2PO_4 and HNO_3 ; the bases KOH and NH_4OH ; and the salts K_2HPO_4 , K_3PO_4 , $(NH_4)_2HPO_4$, $NH_4H_2PO_4$, KNH_4HPO_4 , KNO_3 , NH_4NO_3 , KH_2PO_4 and $(NH_4)_2P_2O_7$; said acids, bases and salts being present in amounts corresponding to the equilibrium ratio as established by the nitrogen, phosphorous pentoxide and potassium oxide content, whereby the resultant solution contains the ions H^+ , PO_4^{3-} , K^+ , OH^- , NO_3^- and NH_4^+ in equilibrium with said acids, bases and salts at a selected temperature and pressure; the nitrogen (N), phosphorous pentoxide (P_2O_5) and potassium oxide (K_2O) each being present in amounts ranging between approximately 1% and approximately 30% by weight.

2,870,058

Fungicide-Oil Formulations. Patent issued Jan. 20, 1959 to Donald J. Loder, Wilmington, Del., assignor to E. I. duPont de Nemours & Co., Inc., Wilmington, Del. A readily-redispersible fungicidal composition obtained by shear milling a finely divided fungicidally active dithiocarbamate in a non-solvent, water-immiscible organic liquid selected from the group consisting of deodorized kerosene, mixed isoparaffins in the boiling range of from 250°-650° F. and white oils having a viscosity of from 50-350 S.U.S. at 100° F., whereby a highly stable, homogeneous dispersion of discrete deagglomerated particles of said fungicidally active compound of average size less than 5 microns is produced.

2,870,056

Fungicidal Compositions Comprising the Mono-Phenylhydrazones of Alpha-Diketones, Alpha-Ketoaldehydes,

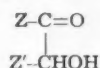
hydres, and Alpha-Hydroxyketones. Patent issued Jan. 20, 1959 to Ernest G. Jaworski, Florissant, Mo., and Dexter B. Sharp, Dayton, Ohio, assignors to Monsanto Chemical Co., St. Louis, Mo. A fungicidal composition comprising water, an emulsifying agent, and the mono-phenylhydrazones of a carbonylic compound selected from the class consisting of alpha-diketones of the formula



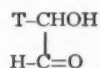
in which R and R' are selected from the class consisting of alkyl and aryl radicals containing from 1 to 8 carbon atoms; alpha-ketoaldehydes of the formula



in which Y is selected from the class consisting of alkyl and aryl radicals containing from 1 to 16 carbon atoms; glyoxal; alpha-hydroxy ketones of the formula



in which Z is selected from the class consisting of alkyl and aryl radicals containing from 1 to 8 carbon atoms and Z' is selected from the class consisting of Z and hydrogen; and alpha-hydroxyaldehydes of the formula



in which T is selected from the class consisting of hydrogen and alkyl and aryl radicals containing from 1 to 16 carbon atoms.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of \$25 must accompany each notice of opposition.

Stauffer, in capital letters, for industrial chemicals and agricultural chemicals—namely, herbicides, insecticides, fungicides, fumigants, nematocides, defoliant, seed protectants, acaricides, stickers and spreaders. Filed March 24, 1958, by Stauffer Chemical Co., San Francisco, Cal. First use 1884.

Fisons, in capital letters, for herbicides and insecticides. Filed Jan. 21, 1958, by Fisons Ltd., Felixstowe, Suffolk, England.

Fury, in capital letters, for insecticide. Filed April 11, 1958, by Minnesota Perlite Corp., Minneapolis, Minn. First use April 8, 1958.

Forest Gold, in capital letters, for leaf mold soil conditioner. Filed June 6, 1958, by Maynard S. Grunder, doing business as Northwest Leaf Products Co., Puyallup, Wash. First use March 28, 1947.

Sprayrite, in small letters with a design above the letter i, for plant growth stimulants. Filed Dec. 5, 1957, by Virginia Smelting Co., West Norfolk, Va. First use Oct. 2, 1957.

Design, drawing showing a house, trees and the words Mock's Super-turf and Greena-Lawn, for chemical fertilizer. Filed July 28, 1958, by Mock Seed Co., Pittsburgh, Pa. First use May 1, 1958.

Hi-Flo, in capital letters, for superphosphates for use as fertilizers. Filed Aug. 8, 1958, by W. R. Grace & Co., New York. First use June 27, 1958.

Bi-O-Kem, in capital letters, for liquid soil conditioner. Filed June 16, 1958 by First, Inc., Phoenix, Ariz. First use Feb. 24, 1958.

Bunyon's Miracle Earth, in capital letters, for organic soil builder. Filed

July 25, 1958, by Bunyon Enterprises, Inc., Morrow, Ga. First use on or about April 11, 1958.

G and F, in capital letters, with the word "and" connecting the two letters, for fertilizers. Filed Aug. 19, 1958, by the Smith Agricultural Chemical Co., Columbus, Ohio.

Smith Agricultural Chemical Co. Names Eight New Officers

COLUMBUS, OHIO—Smith Agricultural Chemical Co., Columbus, has announced the election of William F. Farley, president and Marshall A. Smith, vice president and general sales manager at the firm's annual meeting Jan. 19.

Mr. Smith succeeds Nelson T. White who retired after 36 years of service with the company. Mr. White came with the Smith Co. in 1922 and was named general sales manager in 1945. He held the title of executive vice president upon retirement.

Other officers named at the meeting included: Carl E. Veth, secretary; C. S. Schmelzer, treasurer; Earl F. Cline, vice president; Hartl W. Lucks, vice president; George L. Pelton, assistant secretary; and Joseph W. Sheeran, assistant treasurer.

Nominations Open for Harvey W. Wiley Award

WASHINGTON—A. H. Robertson, president of the Association of Official Agricultural Chemists, has announced that nominations are now being accepted for the third AOAC Harvey W. Wiley Award for Achievement in Analytical Methods. This award, which consists of \$500 in cash, goes to the scientist who makes an outstanding contribution to the development of methods of analysis for foods, drugs, cosmetics, feeds, fertilizers and pesticides, or for use in general analytical chemistry.

The first award was won by L. C. Mitchell of the Food and Drug Administration for his contributions to the development of many methods of analysis for foods and, more recently, for his contributions toward the development of the techniques of paper chromatography useful in meeting problems arising from the rapidly expanding use of chemical additives in foods. The second award was won by K. D. Jacob of the U.S. Department of Agriculture for his contributions to fertilizer analysis and technology.

Nominations must be submitted by April 1, 1959. Nominees need not be members of the association. A general statement regarding the award may be obtained from the secretary, William Horwitz, Box 540, Benjamin Franklin Station, Washington 4, D.C.



Vernon E. Anderson

JOINS GEIGY—Geigy Agricultural Chemicals, division of Geigy Chemical Corp., announced that Vernon E. Anderson has joined the Geigy sales staff. Mr. Anderson, who lives with his family in Kansas City, Mo., will represent Geigy in the states of Wyoming, Colorado, Nebraska, Kansas and Missouri. A graduate of Gustavus Adolphus College, St. Peter, Minn., with a biology degree, Mr. Anderson received his master's degree in Economic Entomology from Iowa State College. He formerly held the position of assistant professor of biology at Buena Vista College, Iowa, and has conducted graduate research work on the European corn borer.

CONSERVATION TOUR

DONALDSONVILLE, LA.—Led by Dr. E. H. Graham, director of plant technology for the Soil Conservation Service, Washington, 18 soil conservation leaders from seven states toured this area recently. The party included three state soil conservationists—T. P. Helseph of Oregon, H. G. Bobst of Nebraska and M. F. Schaefer of Wisconsin. The delegation toured Louisiana to observe technical aspects of soil conservation work with particular emphasis on plants prior to the national meeting in Shreveport.

REMEMBER TO ORDER

CHASE BAGS

There's None Better!

May we analyze your legume inoculant line free of charge?

by Myron E. Lusk, President and Research Director,
Kalo Inoculant Company

There is one product line left in farm chemicals and seeds where the profits are still *lucrative*. That line is private label legume inoculation.

My company, Kalo Inoculants, is one of the largest manufacturers in the private label field. We are a low-cost producer. Hence we can pack quality inoculants at low price for you and establish unusually high profit margins.

Your Profits To 51%

In some cases, your profit can easily range as high as 51%. If you aren't making this kind of money on your legume inoculant line, I'd like to show you how.

Kalo can install a legume inoculant line for you if you do not have one. Or show you ways to bring your present line up-to-date.

Consult At No Cost

We make consultation and analysis trips to your office, study your territory, outlets, and market. Then at no charge, we prepare a consultation analysis showing you step-by-step what we can do for you.

To arrange a meeting, merely clip this advertisement to your letterhead or call me personally. Mr. Myron E. Lusk, Kalo Inoculant Company, 525 Kentucky Street, Quincy, Illinois. Baldwin 2-7383.



New officers of the Mississippi Entomological Assn., elected at the annual meeting at Mississippi State University, are shown in the top photo. They are, from left, front, Reid Faulkner of Greenville, president; C. A. Wilson of State College, vice president, and A. G. Bennett of State College, secretary-treasurer. Standing are James Conner of Canton, Cy Emery of Laurel, Henry Green of State College, and Ted Pfrimmer of Stoneville. A director not pictured is Robert Heard of Gulfport. In the lower photo Dr. Clay Lyle, right, dean and director of the division of agriculture at Mississippi State University, is shown receiving the distinguished service award of the Mississippi Entomological Assn. from R. P. Colmer, chief inspector of the State Plant Board. The presentation was made at the conference.

MISSISSIPPI MEETING

(Continued from page 1)

worm eradication program, as offering much hope in destroying the boll weevil.

Difficulties in developing new insecticides were outlined by Jack Vernon of New York, president of the National Agricultural Chemical Assn.

He told the group that it takes three to five years to develop a new pesticide; costs often run into millions of dollars and that 300 to 2,000 compounds are tested before a new product is released to the public.

Insect resistance and a growing need to increase production of food and fiber to meet demands of an increasing population were cited as making necessary the development of new insecticides.

Three additional insecticides are recommended in Mississippi cotton insect control for 1959. These include Sevin as a 10% dust to control thrips, fleahoppers, lygus bugs, boll weevils and bollworms.

Ethion and Trithion will be recommended for control of spider mites and aphids used at the rate of ½ lb. per acre as a spray and Ethion only as a 4% dust at the rate of 10 to 20 lb. per acre.

In announcing the cotton insect control recommendations, A. G. Bennett, extension entomologist, recommended that farmers follow directions carefully when using the materials and to make sure that all safety precautions are taken.

Speaking of trends in livestock insect control, Dr. A. W. Lindquist, chief, insects affecting man and animals, Research Division of USDA at Beltsville, Md., pointed out that insects cause a loss of more than 600 million dollars a year to the livestock industry.

"This is conservative," he said. "It does not include losses caused by disease transmitted by insects."

Dr. Lindquist reported good results from new systemic insecticides for controlling cattle grubs—a major cattle pest, but called for stepped up research to find controls for horseflies, stable flies and deer flies, all of which cause serious losses to livestock.

Another highlight of the conference was the presentation of the distinguished service award of the Mississippi Entomological Assn. to Dr. Clay Lyle, dean and director of the Division of Agriculture at Mississippi State University.

The award was presented by R. P. Colmer, chief inspector of the state plant board. It was given in recognition of Dr. Lyle's contributions in the field of entomology in past years. He is a former experiment station entomologist, head of the state plant board and extension entomologist.

The growing economic importance of the European corn borer was also pointed out during the conference.

Meeting in conjunction with the insect control conference, the Mississippi Entomological Assn. chose Reid Faulkner, commercial entomologist of Greenville, to head the association during the coming year. He succeeds Dr. Marvin Merkl, USDA entomologist at Stoneville.

C. A. Wilson, entomology professor at Mississippi State University, was elected vice president, and A. G. Bennett, extension entomologist, secretary and treasurer.

Directors named were James Conner of Canton, Cy Emery of Laurel, Henry Green of State College, Robert Heard of Gulfport and Ted Pfrimmer of Stoneville.

NORTHWEST CONFERENCES

(Continued from page 1)

Assn. executive secretary, reported that a new attendance record was established for the Northwest Agricultural Chemicals Industry conference when 125 industry representatives were on hand from Oregon, Washington, Idaho, British Columbia, California, Nevada and Utah.

Although the Pacific Northwest Vegetable Insect conference and the Western Cooperative Spray project were not able to make recommendations relative to latest control methods for insects and disease pests of the western states, they did report on various observations and progress of experiments now under way.

H. E. Morrison and H. H. Crowell of the Oregon State College experiment station, Corvallis, reported on routine studies of the longevity of soil insecticides now in their 10th year at the OSC vegetable crops farm.

In a series of plots established in 1949, 1951, 1953 and 1954, various insecticides at different dosages were rotary tilled into the soil at a 7 to 8 inch depth. The valuation of results has been measured by determining the ability of the materials to prevent wireworms and tuber flea beetles from damaging potato tubers.

The vegetable insect conference was told by Mr. Morrison and Mr. Crowell that no insecticides had been applied to these plots since the initial application.

Dieldrin (10 lb. toxicant an acre) continues to give near perfect control of wireworms and tuber flea beetles after 10 years. Heptachlor, also applied at the same rate per acre, has been under observation for 8 seasons and has given near perfect control of the aforementioned insects, the researchers said.

They also said that Endrin and Isodrin, also applied 10 lb. of toxicant to the acre, have given almost perfect wireworm and tuber flea beetle control each year for 6 seasons, but when applied at 2 lb. an acre, both materials began to decline at the end of the third year.

Chlordane and Aldrin, applied at 10 lb. toxicant an acre, each gave near perfect control of wireworms for 10 years. Aldrin has also given near perfect control of tuber flea beetles for 10 years.

Three department of agriculture research division entomologists reported that Thiodan, applied at the rate of 1 lb. of active material an acre, continued to give effective control of the green peach aphid on potatoes in Central Washington for the third consecutive year.

They also indicated that it has been most effective when applied with aircraft where, it appears, the insecticide fumigating properties are utilized most effectively. They said that Thiodan appears to be more effective when applied as sprays than as dust or granules.

The Northwest Vegetable Insect conference also heard Howard E. Dorst, USDA research entomologist at Logan, Utah, tell of his experiences with the experimental control of the sugar beet leaf hopper.

He said that Thimet (44-D) when applied to monogerm hybrid sugar beets in northern Utah as a seed treatment at 1.4 oz. actual per 5 lb. of seed an acre, reduced the beet leaf hopper population by 85 to 95% in the cotyledon to 4-leaf stage.

K. E. Gibson and W. A. McIntyre with the USDA Agricultural Research Service at Twin Falls, Idaho, told the Northwest Vegetable Insect conference of laboratory tests they performed with new insecticides against the beet leafhopper on sugar beets.

They reported that during the past 18 months, 22 chemical compounds,

mostly of the organo-phosphorus group, have been used singly and in various combinations as slurry treatments on sugar-beet seed to evaluate their systemic qualities and properties by making bioassay tests on plants grown from this treated seed.

Materials were applied at varying rates ranging from ½ to 16 oz. of toxicant to 5 lb. of sugar-beet seed (approximately enough to plant 1 acre.) Plants were grown from these treated seed lots in greenhouse flats and phytotoxicity of the various materials and dosage rates were determined by making daily plant counts from the time of the first emergence until germination was complete.

Beet leafhoppers were caged on these plants at approximately 20, 40 and 60 days after planting. The mortality was then recorded at the end of 1, 3, 19 and 25 hours.

The two entomologists reported that of all the materials tested, none have proved quite as effective in systemic action against the beet leafhopper on sugar beets as Thimet and Di-Syston.

Plants grown from seed treated with these two materials showed relatively long residual systemic values in terms of beet leafhopper mortality. Thimet, used at from ½ to 4 oz. of toxicant to 5 lb. of seed, showed only slightly phytotoxicity at the 4 oz. dosage, and with one exception (½-oz. dosage level 39 days after planting) showed from 90 to 100% beet leafhopper mortality at ½, 1, 2 and 4 oz. of toxicant per 5 lb. seed with a 19-hour exposure up to 39 days after planting.

Mortality on untreated check plants ranged from 0 to 15%.

W. C. Cook and P. E. Featherston, entomologists with the USDA's Agricultural Research Service at Walla Walla, Wash., told the Vegetable Insect conference that experiments in February, 1957 and during the same month in 1958 showed that as little as ½ lb. of Thimet an acre, broadcast on the soil surface as 2% granules, would control the pea aphids on alfalfa.

The Western Cooperative Spray project heard a report by Carl A. Johansen, Washington State College entomologist, Pullman, concerning bee poisoning with pesticides. He indicated that Dieldrin emulsifiable concentrate and Dieldrin wettable powder sprays are not attractive to honeybees.

S. C. Jones and John Painter, USDA entomologist and horticulturist respectively, at Oregon State College, reported that there was no significant difference in the quality of filbert nuts in treated and untreated plots where there were aphids.

Charles H. Starker, E. S. Gandrud Co., Owatonna, Minn., told the Agricultural Chemicals Industry conference that the use of granular chemicals is gaining by "leaps and bounds," particularly in the Midwest states.

Reports on federal and state agricultural chemical regulations were made by D. W. Dean, representing USDA, and J. D. Patterson for the Oregon State Department of Agriculture and L. F. Semler for the Washington State Department of Agriculture.

Roy Miller, Miller Products Co., Portland, gave a report on the conference's agricultural chemicals coordinating committee, and Frank B. Stewart, Western Agricultural Chemicals Assn. legislative committee co-chairman, told of proposed industry legislation.

C. L. Turzan, Geigy Agricultural Chemicals western district sales manager, explained the importance of product knowledge. Proper channels for product distribution were outlined to the chemicals industry conference by B. J. Smith, Portland, western region vice president for the Chipman Chemical Co.

Cotton Program Makes Big Savings For Texas Producers

COLLEGE STATION, TEXAS—Texas cotton producers saved an estimated \$50,100,000 in labor costs by harvesting approximately 2,000,000 bales by mechanical means during 1958 and they saved another \$14 million plus through the use of machines and chemicals for controlling grass and weeds in their cotton fields, according to Fred C. Elliott, Texas A&M extension cotton specialist.

While these savings were being made, they also set an all-time high of 387 lb. of lint an acre. The specialist credits the 7-Step Cotton Program, initiated 13 years ago by the Texas Agricultural Extension Service, as a major factor in the progress made by the producers of the state's most important crop.

The program, says Mr. Elliott, brought together on the county and state basis committees representing every segment of the cotton industry and all have worked to improve their industry. Since 1946 the average lint yield per harvested acre has been increased from 134 lb. to the 1958 record yield of 387 lb.

Researchers Study Insect Behavior

WINNIPEG—Research in the department of entomology, University of Manitoba, is mainly concerned with the study of insect behavior. The object is to use the knowledge discovered to develop new and more effective methods of insect control, reports Dr. A. J. Thornsteinson in the University of Manitoba "Farm Facts."

The most promising approach in this direction is the study of the senses of smell and taste in insects, he says. It has been recently shown, for example, that the odor of coumarin, that is so characteristic of the sweet clover crop, very definitely helps the sweet clover weevil to find its food plants. This means that the new coumarin-free variety, Coumino, should be more difficult for this insect pest to locate.

However, once the weevil finds the clover it will feed on it and cause damage whether the clover contains coumarin or not. For this reason a search is being made for resistant sweet clover plants; that is, clover that the weevil will refuse to eat.

Similar studies on grasshoppers, the potato beetle and the cabbage caterpillar have been made. These studies are designed to reveal what chemicals in leaves make them palatable to the insects and what chemicals make the leaves distasteful and resistant to insect feeding injury.

Hoppers Expected to Be Light in North Dakota

FARGO—Grasshoppers are not expected to be a serious problem in North Dakota in 1959, according to Wayne J. Colberg, North Dakota Agricultural College extension entomologist. In 1959, the greatest threat from grasshoppers will be in the northwestern counties, especially if drouth conditions prevail again this year, Mr. Colberg predicts. Soil bank acres also are expected to contribute to the grasshopper problem in some areas of the state, especially in the lighter soil areas.

ENGINEER RELOCATES

WICHITA, KANSAS—Frontier Chemical Division, Vulcan Materials Co. has announced the transfer of Gene Garnier to its Denver-Rocky Mountain sales area. He was formerly a sales representative for Frontier in the Chicago territory and before joining Frontier in 1956, had been employed by a major oil company as an engineer. Mr. Garnier, a native of Colorado, is a graduate of the University of Colorado where he earned a degree in chemical engineering.

Minnesota Corn Contest Winners Cited

ST. PAUL—Four Minnesota farmers recently were honored for top placing in the 1958 Minnesota X-Tra-Yield-X-Tra-Profit Corn Contest.

Clair J. Hagen, Kiester, won the highest-yield award with 160.9 bu. corn per acre, and Donald Hassing, Easton, had the highest yield increase from fertilizing. Mr. Hassing, who was high yield winner in 1957, had a fertilized corn plot which yielded 83 bu. more than another plot getting no fertilizer.

Two farmers received awards for profit above cost. They were J. Troy Shrock, Preston, who pocketed \$72.37 per acre in corn following a non-legume crop. Manville Thisius, Wells, had highest profit—\$62.48—for corn following a legume.

The awards were made by Curtis Overdahl and Lowell Hanson, Uni-

versity extension soils specialists, and W. H. Kircher, managing editor of the Farmer magazine, which jointly sponsors the contest with the university.

State average yield from unfertilized plots in the contest was 100.4 bu. per acre, Mr. Overdahl said. This was about 20 bushels more than the average for non-fertilized plots, a difference which has varied no more than a bushel from one year to another since the contest began six years ago.

The specialists found there was a definite tie-up between number of plants the farmers planted per acre and the profit from fertilizer. Averages for 6 years show that farmers with less than 14,000 plants per acre—too few for good yields—averaged only 5.8 bu. per acre more from fertilizing. Higher numbers of plants brought better results: farmers planting above 18,000 plants per acre averaged more than 22 bu. per acre above non-fertilized corn.

American Potash Puts Sodium Chlorate Plant on Stream

LOS ANGELES—American Potash & Chemical Corp.'s new \$4,300,000 sodium chlorate plant at Aberdeen, Miss., went on stream in January. Delivery of finished product is expected by mid-February after a tune-up period.

The new plant, designed for an initial production of 15,000 tons of sodium chlorate per year, was constructed primarily to supply chemicals to the rapidly growing southern pulp and paper industry for bleaching pulp and paper. It also is used in weed killers and cotton defoliant.

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The regional circulation of this issue is concentrated in the Midwestern states.

Georgia Program Shows What Can Be Done Toward Big Fertilizer Use and Top Yields

AN EXEMPLARY program in Georgia has shown what a profound influence can be exerted through an intensified emphasis on soil fertility. The project, described in detail in last week's Croplife by Ralph L. Wehant, University of Georgia agronomist, showed a marked effect on more efficient fertilizer usage in the six counties involved in the pilot program. The information contained in the report should be a guide to both agricultural workers and the fertilizer industry in planning subsequent educational programs.

Net results, according to Mr. Wehant's report, included the following: Farmers used more fertilizer; they used less low-analysis non-recommended plant foods and more of the higher-analysis recommended grades. Many used a different kind of fertilizer than formerly.

Furthermore, the average nutrient content of mixed fertilizers increased, with a larger use of nitrogen and lime. Consumption of the latter was estimated to have been from three to five times greater in 1958 than it was the previous year.

An important factor to be considered is that these accomplishments were achieved with a fairly large crop acreage in the six counties out of production through the soil bank. These acres, some 50,072 of cotton, tobacco, wheat and corn were set aside.

As mentioned above, farmers were reported to have used more fertilizers. How much more? Mr. Wehant reports that the total consumption of all mixed fertilizers and materials came to 177,206 tons in 1958 in the six counties, as compared to 160,993 tons the previous year. This increase amounted to 10%, or 16,213 tons.

It should be noted, also, that the 10% increase was in mere tonnage. Actually, because of higher analysis goods being applied, the consumption of actual plant nutrients was increased by 17.5%. By practically any standard, this represents a highly significant jump.

The increased use was of course reflected in records of how the consumption of nitrogen, phosphate and potash went up. Nitrogen enjoyed the greatest jump in use with an increase of 26.7%, much of which was applied as separate materials rather than in mixtures. The gain in nitrogen applied as materials increased 45% in 1958 over the total of the previous year. Both phosphate and potash saw substantial increases in use, too. The report stated that use of phosphate went up 9.3% and that of potash, 18.3%.

Granted that the above records are impressive, one of the most striking facts to come out of the Georgia program was the way it caused farmers to make use of high-analysis, recommended grades. This is the area where the fertilizer trade stands to gain much. If state recommendations are taken seriously by the growers, results are not difficult to see.

In the Georgia project, phenomenal increases were registered for some grades. In the case of 5-10-15, consumption leaped from a mere 3,027 tons in 1957 to 19,937 tons in 1958! Percentage-wise, the figure makes one look twice to see if the gain of 558.5% can be true. (It is.)

To add to the impressiveness of this gain, it should be noted that about 92% more 5-10-15 fertilizer was used in the six counties in 1958 than was applied in the entire state in 1957! Other grades of high-potash mixtures were also strong on the list of generously-applied plant food. Consumption of 4-12-12 increased from 64,196 tons to 70,663 tons and the use of 0-12-12 rose about 244% in 1958 over the previous season.

Fertilizer salesmen and others in the trade acquainted with the reluctance of farmers to make

broad changes from old habits of crop fertilization can appreciate the effectiveness of this pilot program in Georgia. Particularly when they see how these growers were persuaded not only to use more tons of fertilizer, but also different ratios than before. The switches came largely in the phosphate-potash end of the grade rather than the nitrogenous portion of the mixtures.

In 1957, the report states, about 90.1% of the fertilizers used contained an even amount of phosphate and potash, such as 4-12-12 or 6-12-12. In 1958, the number of even phosphate-potash grades was reduced to 80.2%.

There was also a significant alteration in the relationship of phosphate to potash. In 1957, about 6.6% of the fertilizers used in this area contained a high phosphate and low potash content. In 1958, this ratio had dropped to only 3.2%.

The big shift, Mr. Wehant reported, came in fertilizer ratios with a low phosphate-high potash content, such as 5-10-15. Only about 3.3% of mixed fertilizers used in the six counties in 1957 consisted of low-phosphate-high potash fertilizers as compared to 16.6% in 1958.

Increased use of nitrogen was mentioned above as having been 26.7% greater in 1958, but of further interest are some of the details in this connection. This percentage of increase meant the use of some 3,040 tons more actual nitrogen, much of which was represented in high analysis materials. About 9,132 tons ammonium nitrate were used in 1957, against 13,381 tons during the 1958 season. This marked a gain of 46.5%.

Gains were also noted in other forms of nitrogenous materials, with anhydrous ammonia showing an increase of 191.5% and liquid nitrogen 9.4%. "Okay," the fertilizer skeptic might say in looking over these reports of increased fertilizer usage on the part of the Georgia farmers involved in the program. "The only ones to gain in this project are fertilizer manufacturers and salesmen. The farmers spend too much for fertilizer," he might add.

But wait a minute, Mr. Skeptic. Before assuming that the fertilizer industry is the only one to gain, let us take a look at the economics of the situation. Here is a story to change the tune of the cynic and to give the farmer a broad grin.

According to county agent estimates, the corn yield in the six counties averaged 39.8 bu. in 1958. While this is far from the 100 bu. an acre yield aimed at by many corn growers, it should be remembered that this figure is an average, and that it marked an increase of 121% over the 1951-1955 crop reporting service average of 18 bu. an acre.

Cotton, too, registered an increase in yield with the average yield of lint being 462 lb. an acre. This is an increase of 56% over the 1951-55 average of 296 lb.

By using as checks some nine other counties with similar soil and climate conditions, it was found that corn yield in the six counties of the program averaged 6.7 bu. greater than that of the check counties. Cotton lint averaged 43 lb. an acre greater. The value of these yield increases amounted to approximately \$3,712,000. And, for the information of the skeptic, this increase went into the pockets of the farmers. The investment in fertilizer to gain this amount was \$1,238,000, which meant a return to the FARMER of nearly \$3 for every \$1 spent for plant food.

No moral need necessarily be pointed out. It is clear. The more this type of educational procedure is employed, the faster farmers will come to realize that investments in fertilizer do pay well.



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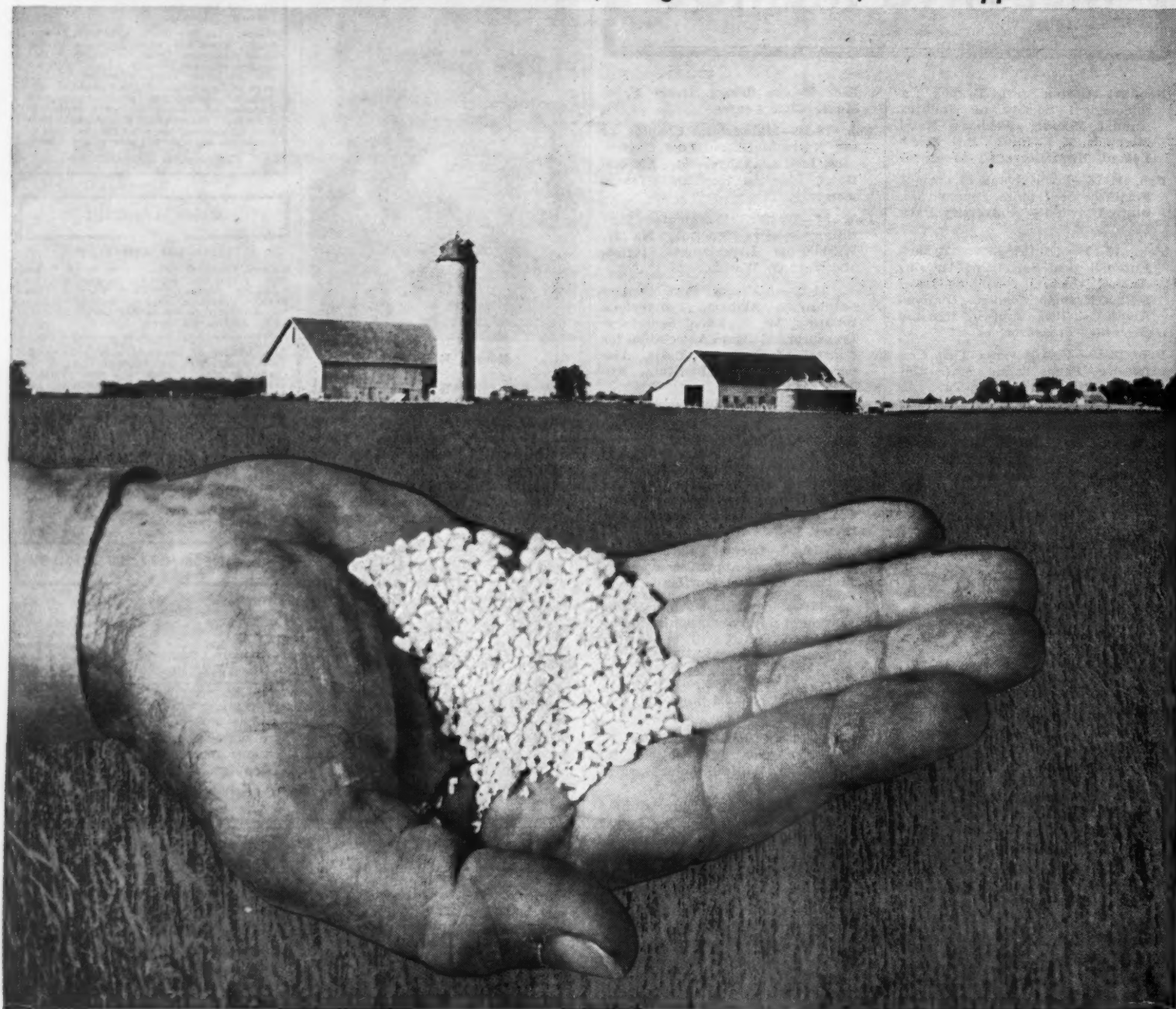
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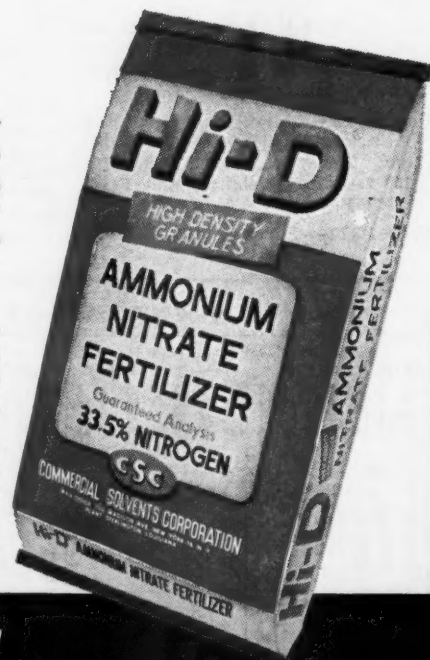
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